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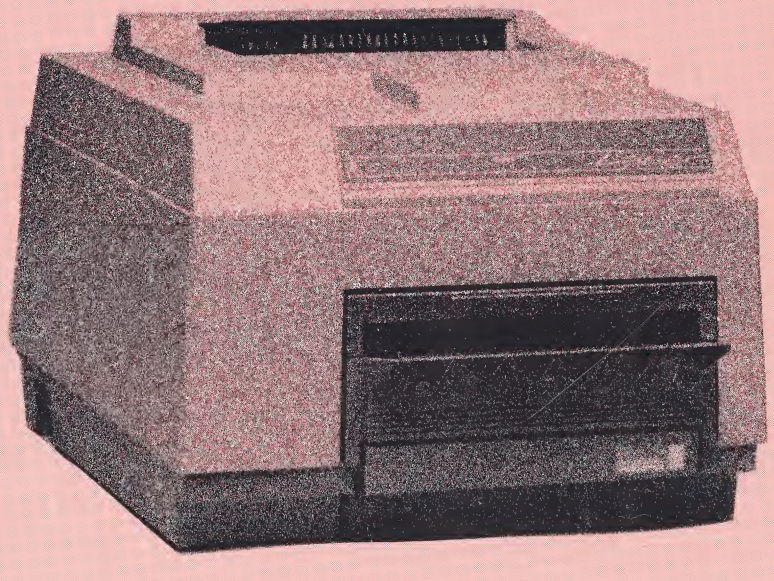
Current Notes

Vol. 8 No.4 May 1988

In This Issue:

ATARI DESKTOP PUBLISHING ARRIVES!



ATARI SLM804 Laser Printer

Your Monitor on the World of Atari

CN 804

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Atari Desktop Publishing

Regular readers will surely notice the new format to *Current Notes* this month. Some articles are in our standard two–column format, but many more are presented in three columns. Text is displayed in a variety of fonts from large type for titles to very small type for library listings. You will also notice more pictures and inserts––placed right in the body of the text with words flowing all around them––and a liberal use of boxes and lines to help highlight the text. This is desktop publishing, Atari desktop publishing.

Just two short months ago I recommended holding off buying the Atari laser printer until the software needed to make effective use of that printer was available. This month, we are featuring the Atari SLM804 Laser Printer on our cover. The software for desktop publishing on an all–Atari system has finally arrived. Timeworks new *Desktop Publisher ST* is out and it is superb. In the past two weeks, we have acquired that program, read the manual (well, some of it anyway), and produced the 76–page magazine you are now reading.

I have been going through a similar exercise in my regular professional job (I only do *Current Notes* in my "spare time") where one of my tasks includes launching an in–house technical journal. I have been using *PageMaker* on a Mac II with an Apple LaserWriter Plus. Let me assure you that the *Publisher ST/Atari* combination has proved to be a more productive and efficient tool. The output, which, by the way, is produced with GDOS and NOT with Postscript, is certainly acceptable and the print speed, if anything, is faster than on the Apple LaserWriter. And the price? Well, suffice it to say that the Atari option is a bit cheaper.

While I am on the topic of desktop publishing, let me point out another desktop publishing option some users may find attractive. Migraph's *Easy–Draw* has a printer driver for the Atari laser printer. It also has a driver for the new Hewlett–Packard "DeskJet" inkjet printer. Jim Wallace, who has contributed an excellent discussion of "Whiz–ee–wig", used *Easy–Draw* and the DeskJet to produce his article. The results were so stunning, I thought you would like to see them for yourself so I reproduced Jim's article as submitted (pages 12–14).

A Eunuch in Atari's Future?

We have been writing about the new "EST" Atari for some time now. This is the next generation, 68030–based computer with a high–resolution (1280x960) screen. Plans are for this new powerhouse to appear first in Europe late this year and then, eventually, in the States sometime in 1989. However, sources tell me that Atari is not sure how to handle the operating system. Current leaning is to base the new machine on UNIX, indeed, to put the OS code directly on a chip. Unfortunately, current plans DO NOT include providing TOS in the new Atari. This means that the new machine would not be upward compatible with current STs and Megas––your ST software would not work in the new 68030 Atari.

I am very anxious to have a larger, higher–resolution monitor which would be a major aid in desktop publishing. But I am certainly not going to give up my ST and Mega to move to a new UNIX machine. I've used UNIX. I've also used MS–DOS. I prefer GEM. I also prefer a machine that lets me run Macintosh or IBM software if I desire. I think Atari would make a MAJOR mistake if they bring out a newer, more powerful computer that is NOT compatible with their current ST and Mega line. If you agree, perhaps you'd better drop Sam Tramiel a line before the decision is cast in concrete.

Better Late Than ...

By the time you read this I will have gotten dozens of calls asking "Where is my *Current Notes*?!?!!?" As you can see, it is out, although it is later than usual. There are a variety of reasons for the delay one of which is the above–mentioned desktop publishing. To say that *ST Publisher* is more productive than *PageMaker* is not to say that it is more productive than *ST Writer*. In desktop publishing, you go through all the steps involved in producing a newsletter with a word processor––inputing text, checking spelling and grammar, highlighting words with italics or bold print. When all of this is done, then you send your text to a desktop publishing program where you are suddenly faced with many more formatting options than you ever had with a word processor. So, you format, and tinker, and adjust, and arrange until the product is just right. Well, that takes time, particularly when you are doing things for the first time.

But the delay this month can not really be laid entirely at the feet of desktop publishing. A variety of unique circumstances this month set the schedule back five or six days. But, rest assured that *Current Notes* is still alive and well and will get back on schedule, hopefully, in a month or so.

With this issue, I start my fifth year as editor of *Current Notes*. Those of you who have watched us grow over the past four years have seen some major changes. As this issue shows, *Current Notes* is still growing and changing. I plan to continue the journey and I believe all of you will want to come along for the ride as *Current Notes* monitors the world of Atari.

--Joe Waters

ST UPDATE
BY Frank Sommers

LATEST NEWS IN THE ST WORLD

The Three C's

Companies are buying computers, supercomputers, minicomputers, personal computers, all at an unprecedented, often unguided rate.

The drive to be competitive, one of the latest business buzz words under analysis at Harvard Business School as well as in the boardrooms of many of the Fortune 500, caters to the electronic myth that a computer in every office will help move you up front, a nose ahead of the competition. Computer firms do nothing to dispel this ephemeral bit of electric fiction. In fact they hype and spin it with great creativity. Take the scientific announcement recently that if airplanes had evolved with the same speed and equivalent reductions in cost as computers had, we would now be able fly to the moon and back for $12.50. The news was neither scientific nor exacting, rather a flashy PR bit designed to keep up the momentum; it could have come from Atari but didn't.

And what propels us forward, we readers of CN who are our own purchasing agents and financial planners, who are not competing in the market place, except possibly to be able to acknowledge that we have one of "the best and the brightest" of the computer clutter, a machine that can "do anything yours can". Let's face it, we want Atari to be the best, so we can be out there up front too. When it looked like we would overpower the Amiga and drive it into the hereafter, we were warm with smiles. Now that it looks like the opposite could happen, at least in the U.S. market, unless Atari is able to generate product, we stomp and fuss and dare that we may abandon the Atari. For what? What machine is out there that gives you as much of a crack at creativity, be it colored entertainment or scientific number crunching, as Andrzej Wrotniak cites elsewhere in the issue, that has the same cost advantages, and most importantly that you care about. The motivation, the caring, the concern that the Atari user community puts into its devotion to its machines is just simply not echoed, outside of the ads, by other computer users.

So we submit in the world of Cost, Creativity, and Caring the Atari is not such an orphan. In fact how many of you out there, who work on computers in your office, in the evening eke out no little pleasure at returning to your ST or XL for several hours before shutting down for the night?

Software

Hat's Off Award -- In this vein, we submit the software that is emerging for the ST, as the number of programs out there approach 1500, is nearing Oscar Award proportions, or at least let's say, "some stellar stuff". The host of drafting and CAD programs is commencing to catch even the eyes of non-Atarians. *DRAFIX I, JIL2D,* and *Symmetry* top the list. *Word Perfect*, the powerhouse word processor is now followed by *Publisher ST* from Timeworks. CN's Publisher, as he notes in his editorial, thought enough of *Publisher* to do this entire issue in it, quite a productreview in itself. Until next month's detailed comparison with other DTP programs out there, let it suffice to say, after using it for more than 50 exciting hours that *Publisher* is a program which does what it says it will! Timeworks, Hats Off! to you. You've done it with *Publisher.*

The Right Stuff? -- Voices in the DTP know have been calling out for several months urging Atari to relent and join the PostScript tide toward tidy topnotch desktop publishing. The first concrete evidence that Reality had landed came as word that *ALTRASCRIPT,* a PostScript clone in software emulation would be displayed at the CEP show (Corporate Electronic Publishers) in Chicago in the latter part of April. The news/rumor was roundly cheered by printing sophisticates. While the software apparently had limitations, for the first time it signaled that Atari users might soon be printing with Postscript fonts. The limitations included the need to take PostScrip codes and print them to a disk, then prepare your DTP page, then boot the clone software and run it with the DTP page as a data file. The program would then send the page to the disk with the codes and print it, using the PostScript fonts. The product is reportedly equal to the original PostScrip printouts but no print times were available. The need to exit your DTP page prior to loading in the clone could be inhibiting.

The Original -- *Publishing Partner* was our original DTP, the first program that gave hint that the ST one day might compete with other DTP big guys. We have noted in the past that major plastic surgery on the next version was underway, but no timetable was available as to when a massive electronic charge would be attached to its vital sectors and *Publishing Partner Professional* would stagger forth, dripping at least 16 new print goodies that would make it the equal or superior of all former competitors. Soft Logic hopes to loft it into our waiting arms in early June. Skeptics date it for fall at the earliest. One of its earlier drawbacks was often the

two dozen minutes it took to print a page full of graphics. Shawn Fogle of Soft Logic notes that the average time to print a similar page with the new release is 53–120 seconds.

The Fastest Update -- *WordUp,* the new highly touted word processor that was to compete with the best or at least possess certain fancy features was shipped in early April. Within 10 days an update was in the mails to all original purchasers. It turned out that more than one graphic installed on a page posed problems. The new version eliminates that difficulty. A full review follows in CN's June issue.

Hard Ware

Blitter Dither -- Despite the debate on the blitter chip and its real speed, many of you will still want to install it on your current machines. Purportedly the chip itself is so configured that it makes it too complicated for a dealer to install it by itself and therefore it will have to be a board upgrade.

EST Update -- Last month we suggested an Enhanced ST might do a peek–a–boo at last month's Hannover fair or take a bow at the next U.S. electronics show at which Atari elects to show "newares". It will be the latter. No EST at Hannover. Presumably the device will not be a separate computer, but a 32–bit board which will drive "the big screen" everybody is waiting for, the 1280 x 960 mono monitor or in color with the sharpness and quality of the current 640 x 480 mono.

The Pot Boils Over -- Although Atari shares some of the 3 C's indigenous to ST users cited above, it doesn't appear to exercise all three, creativity, cost conscious, and caring. Or at least for its dealers. Two of the biggest Atari dealers in California are muttering about dropping the ST line altogether. They, like other dealers, were asked by Atari to make certain commitments, some of them quite expensive, if they wished to become Mega ST dealers. Qualifying included external sales and repair capabilities, upscale showrooms, and purchasing Atari's expensive repair kits. Lack of product slowed down the pressure to qualify across the country. Still a number of dealers appear to have made the changes requisite to be judged "fit" to sell the new and exclusive machines. Word is now out that Atari will sell Mega's through its recently acquired Federated Stores. And the howls are being heard throughout the land.

Empty Wagons -- The trucks that crisscross the country carrying our electronic needs have not been loaded with Atari wares. In addition to previous supply problems the mounting scarcity of 256K and 1 meg dynamic ram chips has meant that few if any dealers received Mega ST's in the last half of April. Europe, where the ST line is a leader, continues to be ahead of us in the supply chain. Recent estimates are that there are now about 500,000 of the ST line of machines spread throughout the continent.

The Jets are Jetting Out the Door -- Hewlett–Packard is a company that has all its C's together, and dealers are flocking to its products. With a massive nation wide ad campaign, designed to put it up front in the printer market, the Desk Jet, listed at $995 but discounted widely from $750 to $650, is apparently a sales streamer, and we mean out the door. (See the article in this issue by Jim Wallace which was reproduced from Desk Jet copy.) ST users continue to praise it's text and graphics quality, with a slight nod to the latter, at least when using *Easy Draw.* The Canon competitor mentioned last month, is now out, also listed at $995. Called the Canon BJ 130 (for Bubble Jet) it is rated at 220 characters per second in draft and 110 cps in finished quality. Estimates are that the cost of printing, say 10,000 pages on the Desk Jet, versus on the Atari laser printer, if you factor in paper, ink cartridges, and print drum (required for the Atari), to be 25% less on the Desk Jet. Before buying check on the time required to print full pages of graphics on all three. The Atari may have the edge.

Anderson vs Star Wars -- Score one for CN author Chris Anderson. Last month in a well researched, tightly drawn article on computers and Star Wars, Anderson concluded that computer technology for the foreseeable future gave no indication of being able to successfully support a Strategic Defense Initiative. Last week the U.S. Congress' Office of Technology concluded after an extensive panel study of scientists (initially both pro and con SDI), that the first time SDI tried to activate itself against an enemy, and presumably there would only be "one first time", the result would be "a cataclysmic disaster".

Speed Merchants -- The demands for more speed and more memory bellow forth with an intensity equal to that of a TV evangelist calling to the flock for money. Strange Systems, down in Webster Texas, has designed a chip and a board for your ST that will turn it into a veritable demon. Kenneth George, it's creator, has taken a MOSTEC 68000–16 coprocessing chip and combined it with a specially designed board so that once installed in you ST you'll be operating at around 16 Mhz. Since it requires that you de–solder your ST's 68000 chip, George does not recommend that inexperienced operators attempt the modification, but instead seek their dealer's help. With "the board" in place your ST will run about 85% faster than it does right now, depending on the software. If you hanker to *pc–ditto* and IBM software, your ST will run it about the same speed as an IBM XT. The product will be marketed by Mega Byte Computer's of Webster. Your first look at it will come at the Atlanta Comdex in May. The product should be in stores by mid–summer.

ST, JR. is Coming

Possibly the most exciting news for Atari 8–bit owners in a long time comes from Merrill Ward & Associates, Inc., of Palm Springs, California. According to Shelby Merrill, Merrill Ward's president, the company will be introducing an ST–like, 8–bit desktop program at CES this June. What GEOS has become to many Commodore 64 owners, Mr. Merrill hopes his company's *Graphic Operating Environment (GOE)* will be to owners of Atari 8–bits.

Affectionately referred to as '*ST, jr.*", GOE will be sold as a super cartridge priced somewhere around $49.99 to $59.99. Use of the super cartridge will allow users to run all external 8–bit software from the desktop. Users may access its many features by using an ST mouse plugged into port 1, by joystick, or by keyboard. The cartridge will include, among other things, the operating system, a word processor, a drawing program, printer drivers, an icon editor, and a number of fonts. Full windowing will be employed for each program.

Discussions are underway between Merrill Ward and Atari, with a possible bundling agreement in the works. Taking its cue from Commodore, whose bundling agreement with GEOS helped revive sales of the venerable C64, might be just what Atari needs to do, in order to inject some more life into the XE line.

All that is in the future. Meanwhile, I have received a demo disk of GOE which contains some of the features which will be found on the final version. In next month's issue I will include some of my impressions of GOE based upon that demo.

Anyone wishing to purchase his own demo version of GOE may do so by sending a check for $5.00 to Merrill Ward & Associates, 255 North El Cielo Road, Suite 222, Palm Springs, California 92262. The $5.00 will be applied to the price of the finished product, which the company anticipates shipping in June/July of this year.

Merrill Ward has already released its first external desktop program employing GOE. The two–disk package, entitled *The Celebrity Cookbook, Vol.1* includes diet secrets and recipes (from soup to nuts) from a number of notable celebrities; a wine directory and bartender's guide; party tips; a built–in feature to help one recalculate amounts of ingredients for smaller or larger groups; and a personal recipe filer. All items will print to printer. Suggested retail is $34.95.

What's New At Atari

In a recent phone conversation with John Skruch, director of software development for the Atari Corporation, the following information came to light:

The game pistol for the XE Game System will go on sale in the very near future in two configurations. The first will be the pistol by itself. This will appear in toy stores and will be geared toward the game system owner who would like another gun. The second version will be bundled with *Bug Hunt* and sold in computer stores. This will be for those 8–bit computer owners who do not intend to buy the game system, but would like to own the gun in order to take advantage of the software coming out for it. This bundled version will sell for $39.95. *Barnyard Blaster* and a Chicago gangster shoot–'em–up, with the working title *The Unpluggables*, are among some of the other pistol–packing carts.

Among the newer titles soon to appear for the game system are *Gato, F–16 Falcon, Mean 18*, and *Ace of Aces*. In many cases the game carts are improvements over the earlier disk versions, if such versions existed for Atari 8–bits at all. For example, the default setting for ascending and descending in *Blue Max* has been changed from back–on–the–stick to go down and forward to go up, to the reverse, a much more logical option.

Mr. Skruch hopes to see a resurgence in disk drive sales, prompted by game system users' desire to expand into non–cartridge based software and to realize the full value of some of their cartridges. For instance, to load additional scenery disks for *Flight Simulator II,* or extra courses for *Mean 18* a drive is required. Likewise, a player–constructed *Lode Runner* screen or *Fight Night* boxer can only be saved to disk.

Actually, the XF551 double–sided, double–density drive is selling quite well worldwide, and hopefully sales of the XEP80 (80–column device) will improve when *AtariWriter 80* and *Silent Butler 80* are released, which should be quite soon.

Kiddie Programs From Hi Tech

Hi Tech Expressions, a company with a brief but rich history of producing printer–oriented software for Atari 8–bits, has announced a number of new products for the first half of 1988. In addition to *PrintPower*, which is reviewed in this issue, two packages geared toward children will also be released.

Sesame Street Print Kit is a print program featuring the Muppets. Children using the kit will be able to design and print illustrated story books, greeting cards, posters, ban–

ners, and party games and decorations.

The Computer Club, billed as a "kid's 'Sidekick' for ages 7–12", includes Secret Message Decoder; Start–Your–Own–Club Kit; Kid Word, an easy–to–use word processor; Address Book, Calendar, and Calculator; plus, Side Show, a window that runs animated cartoons. Each package will retail for $14.95.

Articles Anyone?

Recently I received a letter from Patrick H. Adkins of Gretna, Louisiana. In it, the author makes some excellent suggestions for future product reviews and feature articles. If anyone would like to tackle one or more of Mr. Adkins' topics, please send your article(s) and/or review(s) to me (my address is on page 3). Your material should be on disk, formatted in either Dos 2.0 or 2.5, and it should be written using a word processor compatible with those operating systems. What follows are excerpts from Mr. Adkins' letter.

"First and foremost, I'm interested in reviews of new hardware add–ons such as MIO boards, the XE Game System, and the new disk drive. I'd also like to see a comparison of different eight–bit Ataris, their strength and weaknesses. (For instance, is it only the 130 that has a problem with its keyboard mylar film [?!], or does this problem also affect the 65XE and the new XEGS?)

Particularly useful would be detailed comparisons of the various categories of non–game programs available. For instance, what are the advantages and disadvantages of the nearly innumerable DOS programs? Similar articles concerning data managers, drawing programs, etc., would be equally helpful....

Finally, I would like to suggest that you expand your coverage of the PD software available to us....

Oh, yes, and while I'm thinking of it: Does anyone make a really good, 80,000–word or larger spelling checker for the eight–bit? I could sure use an article comparing the different spelling checkers!"

Cheat

Alpha Systems is now shipping *Cheat!*, a utility program that alters games so you can play with an unlimited number of lives. As a result, players who for years have wondered what the advanced screens of their favorite games have looked like now can play until they reach those hidden delights.

When they become expert at these games, they may return them to their normal settings by employing a second utility called *Uncheat!*.

[Alpha Systems; 1012 Skyland Dr Macedonia, OH 44056; (216) 467–5665. $24.95]

MYTHS AND MARKET MOVEMENTS

Word Processing on the Atari

Much has been written lately about *WordPerfect 4.1* and the possibility this software firm may soon terminate its support for the Atari. First, let me say there is little doubt about the potential power of the program as well as the corporate commitment to service the purchaser. Based on past experience in the IBM marketplace, I encouraged several *CURRENT NOTES* staff members who were sceptical about giving it a try. They did, were impressed with its versatility and power, and are today regular users.

Having said this, you might ask whether I am a user. The answer is, no. Why? Simple, there were too many bugs in the program when it was introduced (my frustration level is low). However, I am now told that it is now "bug-free" or close to it.

Market Difficulties

The problem of getting the program to run correctly is, in my opinion, the primary reason why *WordPerfect* encountered difficulties in the Atari market. Sure, some individuals have a pirated copy of the program but they are not going very far without the 500+ pages of documentation accompanying the program. As pointed out in last months column, the issue of piracy can be a smoke screen. REMEMBER, the impact from a pirated program is negative, in terms of cash flow, ONLY IF it substitutes for what otherwise would have been a cash purchase. The fundamental flaw was in releasing a program not up to the standards expected from this company. In the end, not even a good marketing effort could recoup the loss-of-face (of course, to their credit, Word Perfect provided quick fixes to the bugs). Nor do I believe that the price of the product inhibited its acceptance. If you want a full-featured word processor, the price goes up. But, again the user expects the program to perform as advertised.

The word processor I have been using for almost two years is *Regent Word II.* Up to now, I preferred it to the other word processing programs for the Atari. It does have definite limitations and is not in the "class" of *WordPerfect 4.1.* The problem with *Regent Word II* is not just the lack of features itself but the company. It is copy protected despite user protest and enhancements to the program are nonexistent. *Regent Word II* is a good example of a program which had the opportunity to capture a significant market share early in the game but failed to respond to the signals.

Well, myth may become reality. *WordPerfect* could eventually dominate the Atari market as they do others, i.e., IBM. My word processing needs are growing more sophisticated. I will invest the 200+ dollars and purchase 4.1. This summer there will be time to learn the program. This rather cavalier attitude on my part assumes that *WordPerfect* 4.1 is still available for the Atari by summer. I expect it will be. Word Perfect Corporation seems to understand that their marketing problems started becauseof a less than satisfactory product. Wait a minute, I hope they understand!

Apple Versus Who or Whom-Ever

As most computer users are aware, Apple has initiated legal action against Microsoft (MS) and Hewlett-Packard (HP). The suit by Apple is brought against HP's New Wave interface manager and MS's Windows (Presentation Manager). Several market pundits have stated that the suit by Apple is really designed to stop IBM from developing a graphics interface capability similar to the MacIntosh. In other words, the suit concerns the "look and feel" of HP/MS software, not an issue of coding.

Copyright vs Patent

A number of strategic business issues are related to this suit (aside from the potential impact upon Atari). A very interesting column explaining the situation is Jerry Pournelle's in I*NFOWORLD* on April 4, 1988. Additional insight was provided by a full page article in the *Washington Post* of April 10, 1988 (Outlook section, P. B3) written by Gary Hoffman and Geoffrey Karny, legal specialist. Some excerpts from this article follow – (Note, a patent traditionally protects designs and inventions while copyrights are granted to written material):

"A patent may be viewed as a social contract. Society grants the

inventor the right to exclude others from making, using or selling his invention for a limited period of time. In return, the patent must fully and publicly disclose the invention by describing it in sufficient detail to enable a 'person skilled in the art' to make and use it. In this way, society can immediately begin to build upon the new technical knowledge.

Until 1981, patent protection for software inventions in the United States was relatively difficult to obtain. The Patent and Trademark Office approached computer software as a written expression of a mathematical algorithm, and hence adamantly opposed protection on the grounds that no one can have exclusive rights to mathematical functions.

Copyright protection has been accorded to the program code of computer software for several years. But recently courts have had to confront the issue of whether that protection should cover not only the exact, literal expression of the program code but the idea behind it as well--the so-called "look and feel" of the software as perceived by the operator. An analogous case would be extending a fiction writer's rights beyond the written words to the plot and characters of his novel. [Ed. Comment: Actually such a suit is now before the courts, involving the author orf the best seller, "Hunt for Red October" with the original publisher claiming when it bought the book, it also bought the characters and they can not reappear in a sequel without recompense to the publisher.]

The trend is clear: because Congress has failed to enact a new body of law to adequately protect software technologies, courts have been obliged to fill the gap. And in doing so, some courts have expanded the scope of copyright protection beyond the original intent of Congress. If that protection is construed to cover the basic concepts of the sequence, structure and operation and not the expressed details of the program, then copyright passes into the realm of the protection of ideas--for which the patent laws have been devised.

Such an extension could have a stifling effect on software innovation by effectively preventing developers from enhancing or modifying an overall program design once it was created. As courts deal with the troublesome cases now at issue, their decisions will have a dramatic impact on the future of America's software industry and its ability to compete in markets abroad."

Naturally, HP and Microsoft state in their counter-suits the interface techniques are not copyrightable. From my readings, most industry analysts believe Apple's legal case is shaky. I agree. Apple must eventually find a graceful way out of this situation or risk possible damage to its corporate image. The circumstances of this case are not similar to DRI's (developer of Atari's GEM interface). HP, MS and IBM are corporations with considerable financial resources and will not shy away (or fold as did DRI) from a prolonged legal battle. With Apple targeting the business community, a prolonged legal encounter could steer large corporations away from purchasing the Mac. Thus, Apple loses in or out of court--it's their choice.

Apple's legal action in the future may be regarded as a classic example of a corporation going to the well once too often. Apple Computers and the MacIntosh up to now have grown in acceptance (penetration of markets) not on myth, but substance. Their machine is easier to use than keypunching the IBM. Why else would firms develop similar graphic techniques? Apple should return to substance. How about the slogan "Why not purchase the real Mac-coy?"

The Blundering Giant

Myth has it that IBM got where it is in the PC market because it just happened to have the right idea and right people at the right time. Oh, what a lucky corporation! This story has been carefully handed down for quite a few years and surprisingly many people believe it. DON'T, because it just ain't true! IBM is a calculating, highly competitive firm that got where it is today by smarts, not luck (I don't particularly like IBM but I do respect their business acumen).

IBM is ready to make another move and I am glad I don't own stock in a clone. Some examples:

- IBM has announced drastic price reductions on its PC models over the next 18 months that will drive some clones out of business.

- IBM has announced a flood of new products that will severely strain the financial resources of many of its competitors to keep up.

- IBM is reported to be buying DRAM chips while a portion of its production facilities remain idle. IBM is paying top price for the chips. As a result, fewer clones will be produced at higher prices.

- Some dealers are complaining they cannot meet the quotas set by IBM and their margins are very low. IBM's goal is to recapture market share. The most likely response by IBM will be to let the inefficient dealers fall by the wayside.

This, my fellow users, is not myth, it is hardball. Capitalism is not dead. Pardon a play on words, but the only blue to be seen will be manufacturers pounded by IBM.

That's all for now folks .....

The "Whiz-ee-wig" Myth

by Jim Wallace

Unfortunately, the term "WYSIWYG" or, "What-You-See-Is-What-You- Get" is still really only a dream in the eyes of serious desktop publishers. For now, not only the Atari/Mega ST's, but also all other systems on the market today share this common denominator: no monitor is yet capable of displaying a resolution fine enough to actually give the perfect illusion of a printed page. At best, we now have only a close idea of what the real printed page will look like - even on the most expensive, so-called "high-rez" monitors!

Today's monitors are technologically behind when it comes to producing enough dots (or "pixels") on the screen. For instance, since today's average laser printers print 300 dots-per-inch on paper, you would need that SAME resolution on the monitor screen to have a REAL "WYSIWYG" representation.

YESTERDAY...

When "ENIAC," the first "modern" electronic computer entered the picture back in the early forties, screen resolution wasn't even an issue - since it didn't have a monitor! These first, commercial machines used Teletype printers for their text-only output. While it was possible to do rudimentary "text graphics" using "x's" for instance, to create "pictures" of Santa Clause and other objects, the output was still basically ASCII text only.

Later, after figuring out how to interface a television set - and later, more capable "monitors" to a computer - they still did only text, but at least it was quiet, faster, and more efficient.

The first real computer graphics appeared in the early sixties when vector (point-to-point) graphics were developed. This advanced graphic research by Sutherland, and others at MIT, later evolved into the ability of a computer screen to display real pictures, and even "moving objects" on the screen; capabilities we now take for granted in programs for CAD, painting, and desktop publishing.

Except for oscilloscopes and some arcade games, vector screen graphics (and text only displays) have now given way to "bitmaped" graphics, now that custom graphic chips and cheap memory have finally arrived. But today's genre of graphic displays still aren't perfect.

TODAY...

To discuss this topic more fully, we need a basic understanding of at least the following characteristics of typical computer displays: resolution, aspect ratio, screen size, pixel size and shape, display speed, and grey scale. A basic understanding of each, and how they relate to one another, will help to explain why today's monitors fall short of being exactly "ideal."

Since it isn't my intention to have a "full-blown" technical discussion within the limited confines of this article, I will try to keep it "user friendly" by not going any deeper than is necessary for a good, overall understanding of the subject.

RESOLUTION: Modern computer screens are actually made up of a "matrix" pattern of rows and columns, similar to the type of needle point found on the cover of a box of Whitman's Chocolates; spread sheets are yet another form of a matrix.

Without getting into a lengthly discussion of how televisions and analog and digital monitors actually work, it is sufficient to simply say that the more dots, or "pixels," meaning "picture elements" there are on a given screen, the sharper the picture will be. In fact, the absolute ideal would be a picture so lifelike that you couldn't tell it from the real thing!

Though resolution isn't everything, it is probably the most important factor to consider for DESKTOP PUBLISHING applications.

SCREEN SIZE: The best monitor for any graphic application would be one that allowed you to see an actual size image of what you are creating on the screen, and although it may be awhile before we see screens big enough to display an actual size image of a jet fighter or an aircraft carrier, displays are now available to at least display a full size printed page; you may have seen one of these attached to a Macintosh or IBM clone.

Studies have shown that as much as 50% of a users time is actually wasted scrolling around the screen when using a typical desktop publishing program. This is a special problem for those who use a regular size 9-inch Macintosh screen! But even for those of us with a 12-inch Atari monitor, much time is still wasted just wandering around the screen. And the larger the page size, and the longer the publication, the worse it gets!

While large screen monitors for other computers like the Macintosh and IBM clones have been available for a long time, the price for this solution has been high. Typically, these super-monitors sell for between $700. to over $2,500. In fact, the newer, big screen, analog color monitors for the new Mac II that can display up to 16 million colors can run as high as $4,500! These monitors also require special graphic cards that must be installed to upgrade the system.

And now for us Atarians, there also appears to be a new solution on the horizon. According to scuttlebut, Atari has recently purchased a monitor factory somewhere in Korea, and is now marketing new high-rez monitors for

Continued...

IBM clones and Mac's under a different name. But what's important to us is that new graphic hardware for the ST line will make it possible to increase colors and resolution with a new color monitor. But since color isn't now a high priority for desktop publishers, the news that there is also a 14-inch "full-page" monochrome monitor soon coming out for the ST and Mega computers is more important - and hopefully, it will be available for "power without the price."

A real full-page monitor would speed up programs like EZ-Draw and Publishing Partner over 100%, because scrolling around the page would no longer be necessary for a typical 8 1/2 x 11 inch page. And obviously, this would also be a big boon to professional CAD programs which could also use the additional screen size.

GREY SCALE: Since Atari's present model SM124 monochrome monitor is a "digital" type monitor, it is only capable of displaying either all white or all black pixels. To achieve a shading effect, the software must use complicated "dithering" techniques to simulate varying shades of grey necessary for displaying photographic type images. But unfortunately, this doesn't work any better than it does on a regular Macintosh display. While dithered grey patterns can be used for interesting effects, they just aren't capable of the image quality required for displaying true shades of grey.

The real solution is to use an "analog" type monochrome or color monitor. By using as many as 256 levels of grey (with each pixel defined by eight bits of information) these monitors produce more true-life images, since it has been discovered that the human eye can distinguish between 150 and 200 levels of grey. By using these "ideal" 256 levels of grey on the screen, images look almost exactly like real black and white photographs.

Although monitors of this type, like the new 17-inch, two-page monitor for the Mac II from E-Machines, Tualatin, Oregon, called the "Big Picture IQ" are now available, comparable monitors have yet to appear for the ST (although Atari's new prototype "Abaq" computer has already demonstrated this capability - and in color!) Someday, "real soon now," we should finally be seeing great, scanned screen images that faithfully duplicate the quality of original continuous tone photos and other graphics on our ST screen.

DISPLAY SPEED: While having more pixels on the screen certainly is great, it requires more horsepower to run this extra work load. You can't just suddenly tell the computer to start addressing one million extra pixels and expect it to respond with a "sure, no problem!"

These large screen monitors not only need special graphic chips like the Atari "blitter" chip, and special chips made by Hitachi and others for IBM clones, they also require more "screen memory" to run at least as fast as they did without the extra burden.

For instance, compare how fast the mouse moves the cursor around on your ST screen, compared with the normally slower speed and "chunkier" motion produced when moving the cursor with a mouse on a typical IBM clone! Like the Mac and Amiga, the ST has built-in hardware and software to support the demands of this device, while on an IBM clone, one must add expensive hardware cards just to use a mouse effectively.

ASPECT RATIO: Monitors that do not have an ideal aspect ratio of 1:1 do not generate "square shaped" pixels. If a monitor has a horizontal resolution equal to it's vertical resolution, it then produces square pixels and therefore has an aspect ratio of 1:1. The aspect ratio of output devices such as monitors and printers should ideally be equal, having the same number of pixels both horizontally and vertically. This would make circles always look like circles, instead of "ovals."

With "old-fashioned" text only screens and printers, this was not a problem. But today, with advanced graphic computers like the Atari ST that use high-rez output devices like bitmaped displays, laser printers and high resolution plotters, problems with aspect ratio and other related surprises sometimes crop up.

While the Atari monochrome monitor and the built-in 9-inch screen of a regular Macintosh both display about the same number of dots-per-inch, today's best monitors can display about twice as many, or about 150 dpi. It's more meaningful however to calculate the number of dots per SQUARE inch, which comes to about 5,600 for the Atari and Mac, and about 22,500 dots-per-square inch for the best monitors now available. Although the big screen monitors produce about four times as many dots per square inch as both the Atari and Mac, these still fall short of producing as many dots as a laser printer. Since a typical laser printer scans the drum at the rate of 300 dpi horizontally, and 300 lines vertically, we're really talking about a printed resolution of 300x300 dpi, or 90,000 pixels per square inch. Notice that this is obviously a far cry from the relatively meager 5,600 for the Atari mono monitor and Mac, and even the 22,500 of the best monitors! This partially explains why real "WYSIWYG" is still only a myth - and not yet a reality. The Atari laser printer, like most others on the market, has an aspect ratio of 1:1, since it produces the same number of dots both horizontally and vertically, which is an ideal ratio. But higher resolution devices like the 600 dpi Varityper VT600, and the 1,270 and 2,540 dpi Linotronic digital typesetters also maintain an aspect ratio of 1:1, because they too produce as many dots horizontal as lines vertical. And at 2,540 dpi you're talking about a pixel count of almost six million dots per square inch!

Ironically, users of dot matrix printers, because of their relatively poor resolution, actually have more of a "WYSIWYG advantage." However, many dot matrix users have a problem with aspect ratio. And that's why circles can sometimes come out as "ovals" and why

Continued...

typefaces printed in "landscape" mode in EZ-Draw look like they have been "condensed". While these problems are not always a major hindrance, they could have been virtually eliminated from the start if engineers, software developers, and industry leaders a few years back would have gotten together and formed standards and designs that would benefit computers that must today display and print fonts and graphics of exacting dimensions. However, this hasn't been the only obstacle.

Although the problems with aspect ratio could have been virtually avoided with monitors like the new NEC square shaped, 16-inch "MonoGraph System" that has a resolution of 1024 x 1024 and a 1:1 aspect ratio, the very problem of just producing super-high-rez monitors is also a manufacturing and cost problem. Today's best large screen monitors that can display about 150 dpi cost over $2,500 - and that's more than most of us paid for our computer! Yes, more pixels equal more cost. And just being able to manufacture a monitor with a resolution of 300 dpi is still quite a technical challenge. But remember that even 300 dpi is now considered "low" by todays printer standards!

Though 300 dpi is the average output resolution on most laser printers, advanced, high priced digital typesetters like the Linotronic L100 and L300 now operate at the leading edge of output quality, and it will be sometime before the resolution of monitors can match them. Only when the resolution and aspect ratio of both monitor and laser printer are the same, will we really see true "WYSIWYG."

In addition to what I've already covered in this article, there are other monitor characteristics that we could also discuss, but perhaps the most important of these is "interlacing" and low "band width," which normally cause annoying screen flicker.

THE ATARI MONITOR: Since the Atari monochrome monitor has a rather high band width of 70 mhz, the screen image is one of the best in the industry. And, because of its low price, the Atari monochrome monitor is not only a real bargain, but it can be of immense value when used for desktop publishing. If you don't already own one - get one!

And incidentally, if you are still using your mono monitor "out- of-the-box," and thus are viewing a relatively small screen image, you should be aware that your SM124 monitor can be set to give a much bigger and better picture by simply making a few, easy, internal adjustments. The easy-to-follow instructions have been uploaded to Genie and most other bulletin boards for a long time. You can also take your monitor to any TV repair shop and have a trained service person do it for you. The required adjustments are the same as they would be for an average television set. I changed my own monitor settings over a year ago and have never regretted it!

INTERLACING: The Amiga computer is a good example of a system that is forced to use a technique called "interlacing" to "trick" its low-rez color monitor into thinking that it's a high-rez monochrome monitor. It does this by alternately scanning every other scan line on the display, which unfortunately causes a very noticeable and annoying flicker. This is necessary because the Amiga just wasn't designed with high-rez monochrome output in mind.

Some of you may be surprised to learn that you cannot connect a monochrome type monitor to an Amiga. The Amiga's so-called "high-rez mode" which theoretically produces the same 640 x 400 resolution as the Atari ST's real high-rez monochrome monitor, will forever be handicapped with screen flicker, which has virtually eliminated the Amiga from serious desktop publishing applications.

Fortunately for ST owners, Atari wisely chose not to use "interlacing" in its monitors, and has given us both a sharp color monitor and an even sharper monochrome monitor for the best of both worlds.

But unfortunately for Mac users, the Mac has had some minor problems with screen flicker because of the relatively low band width of it's built-in monitor. Those of you who have compared the Mac screen with that of an ST using the Magic Sak, know what I mean.

THE FUTURE...

If desktop publisher's are ever to have the "ultimate WYSIWYG display," not only are new hardware solutions ultimately required, but new software like Adobe's latest "Postscript screen driver" may also have a major impact until better monitors are introduced at an affordable price. For sure, monitors of the future - perhaps using laser guns, new phosphores, and other advanced technology - will eventually overcome these hurdles of today. But for now, true "WYSIWYG" is still more of a "myth" than a reality.

THIS ARTICLE was originally created on a Kyotronic 85 portable computer (a Radio Shack model 100 "clone") as an ascii file. It was then uploaded to an Atari 1040ST via Interlink software and then loaded into Word Writer ST for spell checking and final editing. Finally, the file was loaded into Easy-Draw and printed out on a new Hewlett Packard "DeskJet" inkjet printer at 300dpi.

Body type was set in 10 point Times Roman.

The picture of the typewriter (below) was scanned at 300dpi on the Navarone scanner and imported into Easy-Draw as an "IMG" file.

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THE ST SPACE CONNECTION

A Profile of Physicist/Programmer Andrzej Wrotniak

By Christopher Anderson

Computers like the Atari ST, which are sold in relatively small numbers, live primarily on the efforts of their users. Very few companies get rich selling ST software rather than IBM's, and there is little incentive for corporations to make large expenditures of resources to penetrate a small and budget-conscious market.

But because of the efforts of individuals, motivated more out of love for the machine than for profit, the ST has a broad and deep software base, and growing more so every day. The names of some of these individuals are well known. Tom Hudson, David Small, Dan Matejka and many others have given service to the ST community above and beyond the call of duty, and have justifiably received acclaim for it.

Andrzej Wrotniak's name belongs on that list, too, though it may not be as well known. As the author of *Sky Map, Zap_Card,* and many other public domain powerhouses, he has emerged as a physicist with master programmer talents and a consummate love for the ST. He is also an active writer for *CURRENT NOTES* (see reviews in the March and April issues) and is currently finishing a powerful scientific package, possibly for commercial release. But most of all, he is an ST enthusiast who has infiltrated Atari into the sort of scientific and professional environments that continue to sniff at IBMs, to say nothing of the strange-looking ST.

Since his exodus from Poland in 1984, Wrotniak has risen quickly to the top of his profession, to the enviable height of not only convincing the software company he works for (ST Systems Corporation--no relation to Atari's ST) to buy him an 1040 ST on which to work, but also swaying NASA (for whom STX is a contractor) to buy a dozen STs on which to run his software.

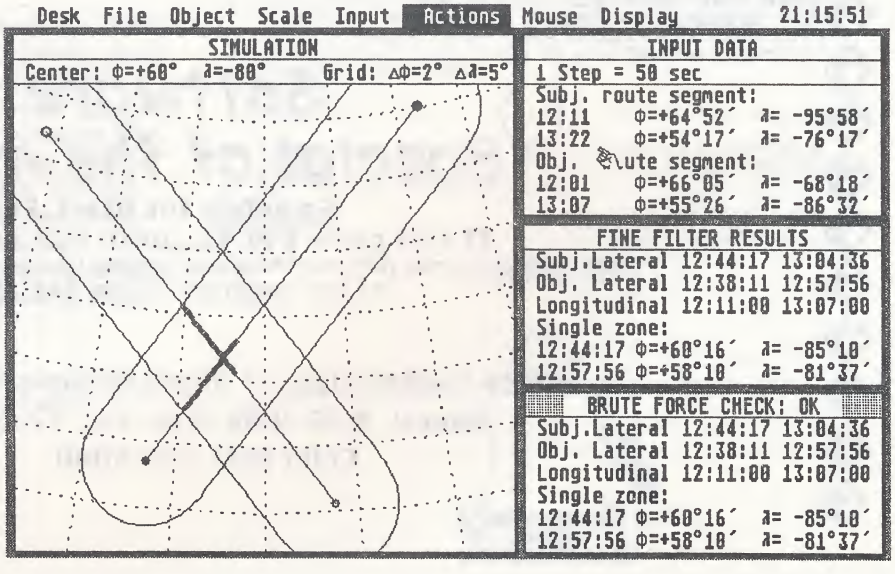
The FAA Connection

Using an ST, he has developed a new method of predicting conflict between aircraft in oceanic air space for the Federal Aviation Administration (FAA). Historically, aircraft positions over large expanses of water were largely a matter of pilot reports and crude approximations. As a result, potential conflicts between planes were hard to predict.

Wrotniak's solution was to use a technique of describing aircraft positions with vectors originating from the center of the earth. Since the aircraft altitude is already known, the position can be calculated with a high degree of accuracy using simple vector arithmetic, while still taking into consideration the curvature of the Earth, something that had been neglected in the past. Using vectors instead of spherical coordinates (the more obvious choice) avoids complicated trigonometric calculations and considerably simplifies the mathematics.

Wrotniak developed the algorithms and wrote a working demo of the program on the ST (using *OSS Personal Pascal*) because he feels most comfortable with the ST graphics programming environment. (See figure below.) All the debugging and testing was done on the Atari. Though the algorithms have been ported to run on FAA's IBM mainframes, the success of the port was measured by how well it fared next to the ST version.

Groundbreaking software like this has made him invaluable enough to be able to essentially write his own ticket regarding his choice of a work computer. On the



advice of his friend and co-worker John Antoniades, he tried out the ST soon after its release. He had learned his craft on Poland's twenty-year-old ICL 1900 mainframes, honing his techniques to make the most of the primitive machines. When he first saw the ST, he knew it was the answer to his prayers, a powerful yet inexpensive computer with superb graphics. He rejected his company's offer of an IBM PC-AT, holding out, he says, "for a more powerful personal computer."

NASA Takes on STs

Because of Wrotniak and Antoniades' enthusiasm, a dozen ST's will soon be installed as workstations for NASA's Cosmic Background Explorer project (COBE), to which the two are primary contributors. The STs will be used to graphically display and manipulate satellite data sent (via the serial port) from the COBE VAX mainframe. To satisfy NASA insistence on Macintosh compatibility, the STs will all come equipped with Magic Sacs.

The satellite data will be "replayed" and analyzed on the ST's, with graphics such as dials, gauges, and buttons replacing indecipherable text and numbers on the screen. Wrotniak expects the use of graphic workstations such as the ST to increase in the scientific world as the incoming flow of data continues to defeat all attempts to keep up with it. Faster communications and sensors have resulted in a flood of satellites data, only a fraction of which can be analyzed. Graphic representation speeds up the analysis process, making it easier to spot interesting trends or bad data.

The COBE workstation program was originally written in *TDI Modula 2*. When that compiler proved restrictive, the code was translated to *Prospero Pascal*, a powerful new British import and Wrotniak's current compiler of choice. He chose Prospero not only for its thorough GEM implementation and well thought-out design, but also for its portability. Prospero markets an IBM version of its Pascal, running under MS-DOS GEM, which will accept source code written on the ST. Porting the program to an IBM is as simple as a recompile.

His first ST projects were "get acquainted" programs; a phone book, a database, some utilities. He quickly recognized the importance of the user interface's appearance to the success of a program, and grew expert with the resource editor. His work shows a uniform attention to detail that is often lacking in other ST software. And with his mathematical skills and experience with optimized code, he is able often to avoid the performance trade-off between speed and ease of use.

El-Cal is his latest project, ostensibly an elementary scientific calculator. "Elementary" to a Physics Ph.D. has a slightly different meaning than to the typical computer user, and *El-Cal* shows it. With an array of scientific and mathematical functions more appropriate to a engineering workstation than a desk accessory, it serves as a sort of math scratchpad. It features function and data plotting (via a small window that pops up over the calculator), derivatives and integrals and a full set of statistical tools, in addition to the standard scientific functions.

Though *El-Cal* is nearly finished, Wrotniak is undecided as to its distribution. As part of a scientific package, it could see commercial release. Or he could, he says, "pay back the people who helped me when I was learning the ST," and put it in the public domain. Either way, *El_Cal* is one more example of the kind of program that can only expand the ST's influence, and not just in the scientific community.

He hopes that by releasing highly polished professional software into the public domain, other ST programmers will be inspired to do likewise.

Wrotniak is, as he says, "a fascist" when it comes to program design. He finds it inexcusable that some programs give options for nonexistent drives when the information can be easily obtained with a simple system call. He mutters about the inclusion of fancy bells and whistles when basics are overlooked and he grumbles about dilettantes who deliriously "upload their programs to Compuserve after their first successful dialog box appears on the screen."

He is a bearded, slim man, more youthful than his 42 years. (something he attributes to cigarettes and beer which, he insists, "kill all the germs.") His love for computing is matched only by his obsession with Bach. One of his earliest (and most necessary) ST projects was to write a small database with which to catalog his hundreds of classical CDs.

He was born and educated in Lodz, in central Poland. After receiving his PH.D. in Physics from the University of Lodz, he taught physics and applied mathematics while occasionally visiting the U.S. as a researcher. It was on one of those visits, in 1984, after his application to extend his work in the U.S. was denied by his university, that he chose to remain anyway, under political asylum.

Like several other notable Eastern European immigrant/refugees, he is a virulent anti-Soviet, as users of his *Sky Map* astronomy program have discovered. He admits receiving criticism for *Sky Map's* "Bomb Moscow" opening screen, though he dismisses the objectors as "not able to take a joke."

It's A Small World
By Dave Small, (c) 1988

SHIPPING THE TRANSLATOR

Part 2: December Nightmare

[Last month Dave outlined the rash of problems that beset Data Pacific in its attempt to get the Translator out to market--delivery of wrong chips, bad chips, fluctuating drive speeds, ROMS delivered instead of EPROMS. Imagine all that bad luck. But it's not over yet. This month we present the second, and final, chapter in the story of the Translator... -JW]

Next Try

Fate, however, was not NEARLY done with us yet. For there were other problems; some Atari's flatly would not talk to the Translator, via the "MIDI" communications link we use.

We uploaded a program onto all the networks to start testing the commlink, (TRNSTEST.TOS) and lots of Translators failed it. Mind you, these were Translators that had worked just fine on the test bench, with *MY* ST.

To make a long story short, we found out that the HP chip that "listens" to the ST via the MIDI link wasn't doing a real good job of letting the Translator know it had heard something. If you happened to have an ST that shouted loudly when talking over the MIDI cables, all was well. My test ST's both shout really loud. But a whisper on the MIDI cables, the HP chip wouldn't hear. Lots of people have whispering ST's, apparently.

Someone pointed out that it seemed appropriate that my ST's shout loudly. Low blow.

We also found out that other people have had trouble with HP "optoisolators", or listeners. So we called up General Instrument ... why, they'd be happy to ship us 500 of their units. We got samples in a day later, tested them, and they worked fine where the HP chips did not. We could reliably make "dead" Translators work by swapping chips, from HP to GI brand.

Mind you, we could not "see" the failures; our ST's worked with either chip. We were running in the dark on both this and the RPM problem. But, our customers let us know we'd succeeded in these voodoo diagnostics.

(In fairness, we later discovered that the HP chips were being run on the edge of what they could do, and the GI chips just had better tolerances. I also suspect some ST's drive the MIDI bus, shall we say, a bit weakly.)

Of course, we also happened to have ST's inhouse with Very Powerful MIDI chips, by sheer luck, that would extract the maximum out of whatever chip was in there, so they passed our tests inhouse. So this one took us by surprise as well. Out of all the Translators that came back to us, perhaps two were real dead units; the others were units that were dead on particular ST's, those with middlin' MIDI or offspec-RPM disk drives.

So, we're talking: Take the Translator apart, desolder the HP chip, put in the GI chip, remove the ROM chip, burn an EPROM, put in the EPROM, test the Translator, put it back together. This takes a number of minutes per unit. Some of these were units that had already had to come apart once for the ROM change, or the data separator change, or ...

This is what I spent most of pre-Christmas doing; I cancelled our family vacation out to California to do this. I'd go until 4 or 5 in the morning doing the same dumb ritual over and over. Susan, our fearless "instant tech" (who THOUGHT she'd be doing bookkeeping for us), turned out to have a natural talent for soldering -- shh!, at least we tell her that! -- and helped us out as well.

By now, the taste of coffee was all too familiar, and everyone at the office was Mighty Irritable with one another. Grunts became commonplace communication. Even Dan Moore, who is cheerful when no civilized human should be (like 9 in the morning, before coffee), got grouchy. "Ugh", he would say.

Customers were Mighty Irritable too. I can't say I blame them. They'd put a deposit down, sometimes as early as September, and when the unit finally shows up ... it doesn't work.

On the networks, Compuserve, Delphi, Genie, and so on, panic ensued. People egged one another on. "Do any of them work?". Fortunately, a lot of them DID work, and some good people stood up for us and said so; Mark Booth, for instance, told the GEnie people he'd had a Translator for some time, and it worked fine. Many other people said theirs worked fine, too. (They had good MIDI and drives, and never had a problem). This more or less stopped the "panic" cold.

Low point: a customer called and threatened us, saying "He was going to call all over the country with

PC-Pursuit to all the ST BBS's and put notes up saying the Translators didn't work unless we fixed his machine FIRST."

All we did was laugh. What, it's news we're having troubles? Everyone who can read knows that. *What matters is what we're going to do about it.* So, we adopted a standard policy. We'd pay all shipping costs and turn the units around in one day. Now some days we'd get 20 units in to fix, and Susan and I would be busy all day fixing them; we'd have to be done by 3 PM to catch UPS.

That takes care of the first part of the day. Now the second part begins. There were new Translators to be shipped out, so those had to be packed up, in the "packing parties" we'd holdupstairs. Dan spent most of December with the phone glued to his ear, taking the dreaded "Tech Support" calls. He could have used a tape recorder. "It doesn't work? Fine, send it in, we'll pay the postage.." and so on.

I still hear the Boston "Third Stage" album in the back of my mind, because it was often left on automatic repeat during these nights. Odd, no one else in the office can stand Boston's albums anymore. I find them strangely comforting.

For stress relief, we often took time "plinking", with a CO-2 pellet gun, at 3 1/2" disks. You'd be surprised at how pleasant it can be to do a Rambo number to a disk. Barb, our local ex-folk-singer, antiwar-protester, and shipping person (I kid you not), expressed surprise at how much fun that was, particularly after some customer would be unpleasant with her. A quote: "I guess I've lost my ideals."

We went like this, often far into the night, until Dec. 22.

So Data Pacific fumbled through to Christmas. We'd gotten another 200 or so Translators in, for about 450 shipped (remainder were DOA units or ones that had not yet been desoldered and fixed, from the original 100). By mutual agreement, we all split for the Christmas holiday; none of us could stand it anymore. We simply had given it all we had. The score: 450 out the door, and now pretty much working exactly right. Data Pacific: five very old people.

After Christmas

I came in a few days after Christmas, just for a look. The place looked like a war zone.

There were test leads in a maze in the lab area, solder splatter from de-soldering covering a whole desk. HP chips littered the floor. Packing "popcorn" also was strewn everywhere. Various computers lay partly disassembled; we hadn't had time to put them back together. There was the SB-180, the Z-80 development system, torn apart when its hard disk flaked out (I still don't know what the problem was, but it seems to be getting better, all by itself); the IBM AT, torn apart so we could plug the EPROMMER into the bus, that later paid the Ultimate Price when a screw was dropped into it (ouch!); the test bench ST's, two of them (another is still up north in the assembly shop), torn apart so I could clip the upper 512K of RAM on or off, with good and bad MIDI cables dangling from hooks, the o'scope, the logic books opened to various pages... I shuddered, turned around, and went back home.

Epilogue: 1988

So, you ask, how'd it turn out? Well, into 1988. In the first week of 1988, on my vacation, it snowed. I went sliding with the children. Came down hard on a lump of ice. Sore chest. In fact, separated ribs. The doctor was gruff. "Well, we don't do anything different if you've broke them or just separated them. We don't strap people up anymore, we found out it gives you pneumonia too often. Go home and don't do anything that hurts." Just for fun, since I had a sore throat, I had him run a strep test, which of course came out positive. On the way home, the car Joel had loaned me popped its radiator cap, and its fluid, all over the road. Was fun opening the hood... amazing how those ribs just seem to hook to everything inside. You blink, it hurts.

Yes, 1988 was off to a great start.

Oh, the TRANSLATOR is what you wanted to know about... Well, the users, once the initial panic phase was over, really were pretty nice to us, with the usual exceptions. On those, we'd hold the phone away from our ears.

Barb, one of our chief telephone people, developed a sudden interest in the Dale Carnegie human relations class. (Between you and me, I suspect she's planning a career in Anything But Computers now. Traffic Cop? Great! Ditch digging? Fine! Intelligence Operative? No problem! ANYTHING but Computers!)

It helped quite a bit that there were people vouching for the Translator; this was especially true on the networks, such as GENIE and Compuserve, where a sort of herd movement can often be detected on the basis of a few bug reports. Jeff Greenblatt, for instance, was always in there saying, Look, mine works fine, I'm sure they'll get the startup kinks worked out.

We impressed a number of people with the one-day turnaround policy, and the Translators overall worked pretty well. There were a few unforeseeable software bugs, but that wasn't any big surprise; there's always a few little surprises, which is why we have software updates. We released ver. 5.7 to cure a bug that prevented long-file-writes to the Translator; we released 5.9 to cure a bug that fouled up short-file-writes, particularly in 832K mode. Customers

Continued on Page 20

BOOKS TO GET YOU STARTED

Two Choices from SAMS UNDERSTANDING SERIES

Reviewed by Pamela Rice Hahn

Understanding CAD/CAM

Computer technology evolves at an enormous pace. No where is this more evident than in CAD/CAM usage.

Much has taken place since The Chrysler Corporation's development of CYBERMAN--the program used to illustrate automobile modeling in their TV ads. CAD systems make it possible for the engineer to display his creative vision, an important stage in the steps required to take that vision from idea to marketable product. (Ask any salesman about the difference, and difficulty, in selling intangible benefits as opposed to tangible ones.) This visionary advantage used to be limited to those lucky enough to be working with mainframes. Now that products such as JIL Corporation/Harvest Software's JILCAD/JILMOD have brought true geometric modeling, design and drafting to the ST, many of you may be anxious to learn more about this topic. For $16.95 you can.

Understanding CAD/CAM is an excellent 300-page introduction to this "marriage between engineering design and manufacturing." All SAMS books in this series are meant to take the reader through a step-by-step understanding of the subject and this book does an excellent job of doing just that. It begins with an historical overview of the subject and includes chapters detailing the Anatomy of a Graphics Workstation, CAD and the Personal Computer, etc. The final two chapters concern CAD/CAM's effect on future directions in engineering.

I believe the authors do an excellent job of detailing a subject in which standards are still being defined. Appropriately enough, the book includes a 2-page Glossary of Standards. Even more impressive is the 72-page Glossary of Terms. Should you want to explore this topic further, the 19-page bibliography provides numerous other books and periodicals you can turn to. Indexed too!

Understanding CAD/CAM by Daniel J. and Annette C.Bowman, ISBN/0-672-27068-4.

Understanding MS-DOS

If, unlike the many who bring work home from the office and use PC-DITTO to emulate their office PC, you wish to submit yourself to this archaic environment to satisfy some curiosity urge you may have, this book will help make sense of this operating system. Seriously, the authors have taken what can be a dry subject and have explained it in an interesting, understandable manner. This 231-page book takes you all the way from the beginning basics to explanations on batch processing and tree-structured directories.

Since most of us do our reading during those times we're away from our keyboards, this book is adequately illustrated and presented in a such a way that understanding is a cinch. Just as important, because this is a beginner's guide, the authors do not assume the reader has any previous knowledge on the subject. As each bit of jargon is introduced, an explanation of the term is given. [For example: "In computereze, a group of characters (whether or not they make up an English "word") is called a string.] The glossary, index, and appendix of error messages add to its value as a reference guide.

Understanding MS-DOS, Written by Kate O'Day, Revised by John Angemeyer, The Waite Group, ISBN/0-672-27067-6, $16.95.

HOWARD W. SAMS & CO, A Division of Macmillan, Inc., 4300 West 62nd Street, Indianapolis, IN 46268.

December Nightmare (Continued)

really appreciate being able to download and use this week's cut of the Magic Sac; it really tightens the feedback loop between themselves and us here at Data Pacific. Of course, it leaves egg on our face when we screw up, but that happens; 5.9 is dated "January 1987". Oops.

Most pleasing of all to me were the people who ordered the Translators *because* of the support they saw on the networks. One fellow wrote to say "it had clearly been a bad situation, but you guys hung in there and didn't give up. I want that sort of support for my machine" -- so he ordered a Translator.

So, by the third week in January, which also was about the time the Broncos beat Cleveland for the AFC championship, we had the Translator software pretty solid.

As of this writing, we're still backordered about 300 units, and the next production run is placidly plodding along. Our suppliers have GI chips and new EPROMS all mass-burned up there, ready to go, and we're promised the next shipment at the end of January.

Why, of course, they'll work the first time! I think I can hardly wait. My summary of all this? Despite all the hassles and troubles, we got it out the door.

HyperCard and the Magic Sac

As the title of this article implies, it is now possible to run *HyperCard* stacks with the Magic Sac. Up until recently *HyperCard* would not work with the Magic Sac. It still doesn't. *HyperCard* apparently requires 128K ROMs, so it appears that it will never work with the Magic Sac unless Data Pacific decides to come up with a 128K ROM version of the cartridge. This is highly unlikely in the foreseeable future.

Enter *HyperDA*

By now I bet you are wondering how I can say you can run *HyperCard* stacks if *HyperCard* doesn't work. Well, the answer is *HyperDA* by Symmetry Corporation.

HyperDA is a desk accessory that reads *HyperCard* stacks. *HyperDA* is a stack "browser" which lets you look or flip through stacks. A stack is a document which is created by *HyperCard* and usually contains several cards. Each card is a screen, so in essence, a stack is a document very much like a deck of cards. Depending on how the stack was created, you can view each card in sequential order or in the order that the creator meant them to be viewed.

HyperDA is not a replacement for *HyperCard* and there are major differences between them when running stacks under *HyperDA*. As I stated earlier, *HyperDA* allows you to "browse" through stacks. As such, *HyperDA* does not allow you to input data into or modify the stack. Using *HyperCards* Home stack (figure 1) with *HyperDA*, you can move to and from other stacks directly.

There is one problem when using *HyperDA* with the Magic Sac, it doesn't work when installed into the System file. Purely by accident, I discovered that the only way to make it work with the Magic Sac is with a DA tester such as Sample It! or DA Tester 1.5, both of which are in the public domain. Due to this method of operation, the clipboard function of *HyperDA* doesn't workcorrectly. Here is a rundown of the available commands:

OPEN STACK – Opens a stack from a dialog box. Once the stack is open, it can be used as if it were running with *HyperCard* with certain limitations. More about these limitations later. Stacks usually have buttons to press which let you move from card to card. Some cards don't have buttons that are that obvious and you can end up searching all over the screen and

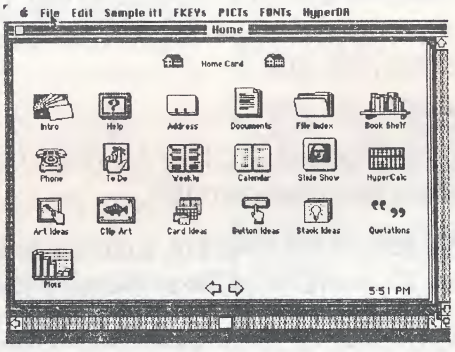


Figure 1 – HyperCard's Home Stack Menu

still not find them all. One very nice feature of *HyperDA* is that if you hold the Control and Alternate keys down, all buttons on a card will be displayed. If you hold the Shift, Control and Alternate keys down, all text fields on a card will be displayed. But this feature appears to be of little or no use since a card can not be modified with *HyperDA*.

CLOSE STACK – This closes the current stack and it disappears from the screen. Another way of closing a stack is to open another one. Whenever a stack is closed using this command, *HyperDA* is still available from the menu bar.

WINDOW (Control–W) – Whenever *HyperDA* presents you with a card, it normally takes up most of the screen. Using the window command places the card in a standard Mac window complete with zoom box, resizing box and scroll bars. This feature would be very useful if *HyperDA* worked as a true DA with the Magic Sac. Copying and pasting stacks to and from the clipboard for use in other applications would be handy.

FIND (Control–F) – Choosing the find command brings up a *HyperCard* like "message box" which allows you to locate a specific text string in a stack. This command is neither case or whole word sensitive. That is, upper and lower case letters are ignored and if you search for the word "is", it will find "is", "island", "Isabelle" and "issue". It only finds words beginning with the letters you are searching for. When it finds a match, *HyperDA* displays the card. Pressing return after it finds a match will continue the search until it finds another card with a match. If no match is found, you will hear a beep assuming you are using MacBeep. This feature is extremely handy for searching for a particular card in a very large stack. It should be noted that some stacks have over a hundred cards and searching for a particular card by text is a lot easier than flipping through all the cards.

PRINT CARD (Control–P) – This command does just that. The current card displayed on the screen is dumped to the printer through the standard print dialog box.

PAGE SETUP – This command brings up the standard dialog box to define the parameters for printing a card. This assumes you have a printer driver installed in the System file.

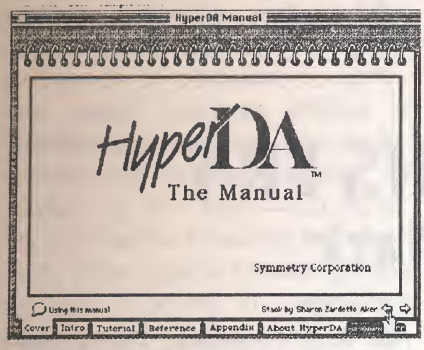


Figure 2 - First Card of the Manual

FIRST, PREV, NEXT and LAST (Control 1, 2, 3 and 4) – These commands allow you to display the First, Previous, Next and Last cards of a stack that is already open. They are most useful when moving around through a stack, especially in large ones.

Control–M – All the commands noted previously are available from a pull–down menu. One additional command, Control–M, opens *HyperDA*'s message box. With it, you can type in and use any of the HyperTalk direct commands supported by *HyperDA*. Currently, only 22 HyperTalk commands are supported. This is a serious shortcoming of *HyperDA* and severely limits its ability to browse through stacks that have been written with scripts using features *HyperDA* does not recognize.

HyperDA comes with a brief but concise well written manual. For those of you who hate reading manuals, Symmetry provides the manual on the disk in the form of a stack. The stack is a much more intuitive way of learning how to use *HyperDA* and it is one of the most innovative ways I have ever seen to demonstrate how to use all the features of a software product. See figures 2 and 3 for the first two cards of this stack. IT'S GREAT!!!!

Limitations

Using *HyperDA*, you will find not all stacks run as they would with *HyperCard*. This is because many of the HyperTalk commands are ignored. The manual makes a point of noting that certain visual effects between cards are ignored, and that one card replaces another on the screen. As such, the visual effects of zooms, wipes and some animation are lost, although if you run the stacks on a hard disk, cards can be flipped almost instantly. Additionally, all XCMDS and global variables and other HyperTalk features are ignored which makes some stacks totally unuseable. This is especially true for some game stacks I tested. Symmetry should consider implementing more of HyperTalk's commands in a future version of *HyperDA* if at all possible.

Oddly enough, while Symmetry provided keyboard equivalents for most of *HyperDA*'s commands, it left out two of the most common ones. These are Control–O (OPEN) and Control–Q (Quit). I can only speculate on why they are missing. I assume that they may conflict with these same commands in an application that would be running at the same time that *HyperDA* was active since these commands are almost universally used by most applications.

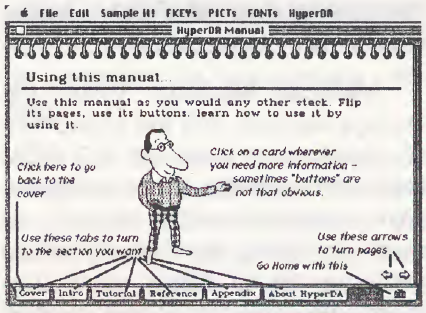


Figure 3 - Second Card of the Manual

Symmetry should also consider developing *HyperDA* as a 512K Mac version of *HyperCard*. I say this because there are reportedly several hundred thousand Macs around that haven't been upgraded with 128K ROMs, and as such, these machines can not run *HyperCard*.

This is a first for *Current Notes, that is,* the first time a commercial software product for another computer system has been reviewed. Come to think of it, it may be the first time any Atari oriented publication has ever done this.

Even though *HyperDA* has some severe limitations it's the only currently available way to run *HyperCard* stacks with 512K of RAM and 64K Mac ROMs. Besides, it really is fun to flip through stacks just to find the buttons that do work and to see what they do. *HyperDA* lists for $69.95 but is heavily discounted through most mail order outlets. Current Notes purchased it for $38 plus $3 shipping (Federal Express) from MacWarehouse(1–800–255–6227). GET IT!!!

[HyperDA, version 1.01, Symmetry Corp., Mesa, AZ 85203, requires 1–Meg ST, Magic Sac and a DA tester, Hard Disk recommended]

New Hyperstack Library Disks

Current Notes has added two DOUBLE–SIDED Magic disks full of *HyperCard* stacks for use with *HyperDA* this month. Due to the size of some of the stacks, DOUBLE–SIDED disks had to be used in order to offer more than just a couple of files on a single sided disk. The stacks on these 2 disks have been tested with *HyperDA* and most, if not all of the buttons function properly. Here is a rundown on what is on each disk:

Disk M48, Hyperstacks #1 contains the following stacks: Address, Databook, Fractal, Funy Day, Home Desk, Home Desk Docs, HyperNews 1.2, HyperZoetropes, MacGallery, MacVermont #2, Notebook, Periodic Table, and ResEdit IPS. Please note that Address, Databook, Notebook, and Home Desk are alternate stacks for the ones that come with *HyperCard*.

Disk M49, Hyperstacks #2 contains the following stacks: Ear, Illusions, Passing Notes, Shipstack, Silly, and US States V.2.

REMINDER – Disks M48 and M49 require a Magic Sac, 1Meg ST with double–sided drive, *HyperDA* and some form of DA tester. If you don't have a DA tester, Sample It! is available on Current Notes disk M46 and DA Tester 1.5 is available on disk M8 or M18.

CD REPORT

By Linda W. Helgerson

THE CD-ROM INDUSTRY
At The 3 1/2 Year Mark

Three and one half years ago, in November, 1984, Denon, Hitachi and Philips demonstrated prototype CD-ROM drives with promises of production quantities to be delivered in the first quarter of 1985. Consumers then were buying up quantities of CD audio players at newly reduced prices for the holiday season. Philips/Sony licensees were awaiting a final version of THE YELLOW BOOK containing CD-ROM physical specs, discussions concerning a standard interface between the CD-ROM drive and microcomputers were just beginning, and the first commercial CD-ROM disc was in final preparation by The Library Corporation. 1985 through 1987 were years of learning, testing, and reasonable growth for this newly introduced optical read-only storage media.

Now, three years later, the climate and industry surrounding CD-ROM is changing. Rather than having to wait for things to happen--such as, the completion of a worldwide standard for the logical file format or the delivery of production units of the embedded, 5-1/4" half-height drives--these expectations are a reality. Also, the basic hurdles, a.k.a. learning curves, have been surpassed by users. Publishers, large and well-established and the smaller, heretofore unknown firms, have passed the initial CD-ROM disc prototype stage, and are well on their way to full production with detailed plans and market analyses and sales projections. The situation has changed, and the "early years" of this 3-1/2 year old read-only media is giving way to adoption of CD-ROM by intermediaries and users with microcomputers and firms needing to disseminate large quantities of information internally or to customers.

A Review of 1984-87 For The CD-ROM Format

Standardization of the Logical File Format. With the initial hard work of the High Sierra team, and then the later deliberations of NISO, ANSI, ECMA, and ISO, the standard for placing digital data on a CD-ROM disc was adopted in October 1987. This worldwide and industry-wide cooperative effort has allowed those firms waiting in the wings to commence with their CD-ROM publishing and distributing plans.

Vertical Markets. Given the storage capacity and the economics of distributing data on CD-ROM versus other media, most publishers have selected vertical markets as most promising for their CD-ROM products during these years. The library, financial, legal, and medical markets have been the initial targets.

Broadening Interest. Initially limited to those looking for a unique delivery mechanism or those firms not molded in a traditional industry, CD-ROM publishing gained a wider audience than anticipated. The technology now appears to be well understood within the traditional publishing industry as well. Some major publishers, online database providers, and computer manufacturers have announced their intent to move products to CD-ROM or to configure CD-ROM as part of their product delivery system. McGraw-Hill, West Publishing, Dialog Information Services, Lotus Development Corporation, Apple Computer, Hewlett Packard, and Atari Corporation are examples. Others are in the process of developing their plans and products, and those still waiting in the wings are furiously assessing the risk of not using or providing CD-ROM technology.

Hardware Availability. Hitachi, Laser Magnetic Storage (Philips), and Sony supply the production quantities of drives. Behind these three, there are other Japanese and U.S. firms ready to move into production or developing the necessary in-house production capabilities. Half-height drives, SCSI interfaces as standard (but sometimes optional) items with drives, and audio output became available. Prices dropped, particularly with the half-height drives and with quantity orders. Originally priced around $1200, single units are now available for half this amount.

Developing Infrastructure. Large, as well as small, publishers now have a variety of options among service firms. Those companies that supply services to the CD-ROM industry, such as data conversion, tagging and preparation, retrieval software and replicating houses, now face heightened competition. The growing sophistication of this infrastructure of service organizations is another indicator of positive movement of the CD-ROM industry, and tools are already on the market that allow publishers to perform these operations themselves.

Industry Activity. One significant gauge of the health of any

particular technology, such as CD–ROM, is the almost disproportionate proliferation of conferences, seminars, market forecasts, articles in established periodicals, new publications and industry experts, all devoted to one topic––CD–ROM. Not only has this indicated the interest by those special interest groups but also it points to heightened expectation of forthcoming profits for authors, analysts, conference organizers themselves, to say nothing of the industry.

International Activity. Spurred by internationally accepted physical and logical file format standards for CD–ROM media, titles have been produced on several continents. More significantly, however, cross–marketing activities are already in place with notable organizations in joint–venture relationships with very big plans. Philips and Sony began the trend with the development of the Compact Disc Physical Standard, commonly known as The Red Book. Microsoft, Olivetti and STET formed SEAT in Italy, setting a trend for CD–ROM publishing and disc distribution with accompanying computer and CD–ROM drives in that country beyond that of any other European country. Disctronics,having launched its own manufacturing facility in Australia, soon acquired three additional facilities in two other continents. The ADONIS Project, a consortium of publishers of medical references and journals, now distributes reprints of articles to end users using CD–ROM as the distribution device to document centers located worldwide. Firms of all sizes with varied products and services are merging efforts and capabilities.

Major Players. CD–ROM has attracted large, multi–national corporations. N.V. Philips, the Victor Company of Japan, Matsushita, Du Pont, 3M, Mobay, and GE are among them. Other "big names" have publicly announced their CD–ROM plans and products––Microsoft, Lotus, Apple, Hewlett Packard, Reed International, Elsevier Science Publishers, McGraw–Hill, John Wiley & Sons, Spring–Verlag, for example.

Titles Available. The most frequently asked question is, "What titles are available?" The answers vary, depending on whether the individual responding knows only of those titles described in trade journals or whether the respondent

....By the end of 1987, 250+ CD–ROM titles were commercially available.....

tracks all developments in each of the very well established and "hidden" vertical and niche markets. By the end of 1987, 250+ CD–ROM titles were commercially available, compared with less than 100 the previous year. The next logical question is, "Why haven't I heard of them?" The answer is simple––the data on the majority of these CD–ROM discs are specific to a particular audience and would not necessarily be advertised or described in publications you read.

If you owned a floral shop, you would know about the CD–ROM directory of FTD florists across the United States. If you were a geophysicist, you would know about the highly regarded Geophysical Data disc. If you were a geologist, you would know about the Mass Spectral Data disc or the Powder Diffraction disc. If your firm tracked the airline industry, you would know about the series of discs containing both U.S. and international transportation statistics. If you built or sold automobiles or airplanes, you would know about the proliferation of technical manuals or parts catalogs now available in increasing numbers on CD–ROM systems.

Many discs initially were manufactured in quantities of 10 to 25 for internal evaluation or for use at beta sites. By the end of 1987, publishers began to contract for larger runs. One division of McGraw–Hill intends an initial distribution of 34,000 titles with drives at the end of 1988. Major launches such as this will become more commonplace as publishers––such as the Federal Government––understand the economics of disc distribution.

Sales. Given an appropriate application and pricing structure, end users are willing to buy software with accompanying hardware. In the early days, a CD–ROM drive was often acquired first and a disc, any disc, was purchased to try out the retrieval possibilities. Publishers learned from these early tests, and large databases became more "user friendly." By the end of 1987,products had not only the Boolean operators associated with professional searching, but also menu–driven techniques for the end user. Titles, introduced during 1985–1986 and updated in 1987, offered more capabilities, complimentary databases on the same disc, and integration capabilities with application software and writable storage devices. The mere quantity of these improved versions depicts the first three years of the CD–ROM industry as ones of learning, trial–and–enhancement, and steady growth.

Looking Ahead From 1988

From this point forward, the theme of the CD–ROM industry is still one of growth, but exponential growth, accompanied by a maturing infrastructure. Although CD–ROM technology is now established, widespread numbers of applications in vertical markets are forthcoming.

Any Disc/Any Drive. With the physical and logical file format standards in place, only a few minor items need to be addressed before publishers and buyers can put aside any concern about using a disc

produced at any manufacturing facility on any drive produced by any vendor with any software on any computer.

The MS-DOS Extensions announced in the fall of 1986 by Microsoft are available under license to CD-ROM drive manufacturers. This additional software eliminates the 32 megabyte file-size limitation and hardware dependency. The delivery of these MS-DOS Extensions by drive manufacturers will play a key role for buyers deciding among drives and drive features. In fact, it is expected that the Extensions will be used by vendors as leverage for acquiring quantity orders.

SCSI interfaces are now either standard or optional components with the half-height drives. Given the push for universality in CD-ROM technology, firms that try to differentiate their products or services by producing a unique or possibly limiting interface design face embarrassment. In the long run, the buying public, rather than marketing muscle, will be the deciding factor for these kinds of issues.

Unfortunately, in the short term (hopefully), there are some integration issues still to be ironed out. For example, although SCSI is a standard, the SCSI interfaces supplied with CD-ROM drives do not necessarily work with other SCSI peripherals, or vice versa. Early in 1988, a universal SCSI interface was introduced that would work with any CD-ROM drive. This is a first step, but the larger and far more important step is a universal SCSI interface that will work with any CD-ROM drive AND other SCSI peripherals simultaneously.

Another step towards the ANY DISC/ANY DRIVE effort is the elimination of multiple and incompatible cartridges used with discs inserted into the half-height drive. One would havethought that drive manufacturers would have worked this all out prior to announcements. Since this is not the case, the market will decide, and undoubtedly it will decide in favor of the disc cartridge which is easiest to use, i.e., you can open it without destroying the disc, and the one which the majority of drive manufacturers have selected already--in short, the Sony cartridge. Lack of compatibility of disc cartridges should be viewed in the long-term as a tactical error.

Maturity of Infrastructure. Much growth will occur in the service portion of the CD-ROM industry in the next two years. Data conversion, preparation, database indexing, and premastering--like printing tasks--will be handled in-house (with the purchase of component parts and software or of an integrated system) or by a dedicated service firm. The choice will depend on the amount, type, and frequency of disc publishing required, and the business interests of the publishing firm.

Retrieval software, off-the-shelf or application-specific, will move beyond what existed during the first three+ years. Already, the next wave of build and retrieval software capabilities is evident. Rather than being limited to search and retrieval software that can be modified to fit the requirements of the database and the end user, the software used to prepare the data (i.e., tagging for document structure, creation of lateral connections between databases, documents or related subject areas) will ITSELF become as if not the more important part of the equation.

Although concentration during the formative CD-ROM years was primarily on the user interface and the retrieval side of the equation, the emphasis will change to the initial developmental side of the equation. Programs--just like application software--will become available to assist publishers of all sizes and interests to develop their own databases beyond what is now considered state-of-the-art--i.e., management data base systems (MDBS) and records management programs.

This need and soon-to-become requirement has occurred as a result of the inherent nature of CD-ROM--a storage device for DIGITAL data. If publishers are to produce these digital (i.e., ASCII as well as raster) discs and less-than-computer-techies are to use the data from these discs, then the ART of producing must become a known ACT. The future of companies in the CD-ROM business--software developers/suppliers and disc publishers--will survive or blow away as a result of attending to THIS VERY ISSUE.

Replication of discs will be a certain area for technological improvements. New techniques, faster production, and higher yields will make discs a true commodity item--as affordable to the small publisher as to the large. There is already heavy competition among disc manufacturers in the form of pricing structures, services, and often-discussed quality of discs produced. This is not, however, the area where competition will stay. It will move to other areas, such as replication of CD-ROM discs using holography which, in case you have not considered it, will yield a STANDARD CD-ROM disc capable of storing many times the number of megabytes now considered as normal.

New services based on a maturing infrastructure will prosper and grow. The most obvious one is in the area of authoring systems, software, and tools. A half dozen such integrated products have already been announced, and they are being purchased. But, like the next-generation build and retrieval programs, "you ain't seen nothin yet".

The distribution and fulfillment segment of the industry is another area just beginning and ready to grow--BIG. Firms are already creating the mechanisms for answering questions, such as "Where do I get a

drive?" or "How do I buy a certain disc title?" What has already been determined is how different the process of distributing CD-ROM products--hardware or software--is from any previous distribution activity. Book distributors find themselves in the business of selling hardware. Drive manufacturers, most all of whom are consumer electronics firms used to selling to the retail consumer market, are now faced with integrating their CD-ROM drives with computers (with all the associated incompatibility issues), having to develop device drivers for each newly announced drive, having to license and supply MS-DOS Extensions and device drivers, having to figure out how to sell drives to customers rather than to retail wholesaler/distributors. Serial and magazine subscription houses have to learn about the world of computer peripherals and markets other than the known academic or corporate library markets. In short, known ways of accomplishing distribution and fulfillment activities and servicing and supplying traditional markets are dissolving into a maze of opportunities and headaches.

And finally, the multitude of conferences that deal with "what the CD-ROM industry is all about" is already giving way to workshops training individuals and companies on how to produce their own CD-ROM product line. Meridian Data, Microsoft, and PDO began this type of activity with a series of workshops in 1987. Multiple expensive industry-wide, generalizable conferences will be looked upon as useful only to those hauling in cash for registrations and exhibits. Instead, Gates' willing, there will be one or two U.S. and/or international CD-ROM conferences where the industry will announce new products and services, and preen in the face of competition.

Instead of the generalizable, all-things-to-all-people type gatherings, more pertinent discussions specific to the listening audience will occur at industry-specific conferences and meetings. Introductory-type seminars will change to training programs, and introductory "How To" training programs will then move to more technical "How To" programs as the CD-ROM industry moves from learning how to store, produce and distributed essentially textual data to producing standard CD-ROM discs with text and graphics and audio and video still and motion images.

Possibly more than any other activity, the maturing of the infrastructure has been, and will be, the key indicator of the growth and maturity of the CD-ROM industry over the next several years.

Mass Markets. Manufacturers of the lower-priced, mass-market computers will introduce systems with increased processing speeds, enhanced graphic capabilities, higher-resolution displays and more embedded storage. CD-ROM drives, either embedded or freestanding, with faster access times and lower prices will be available as standard or optional items to mass markets. They may even be bundled with the delivery of appropriate titles before 1989. Not limited to the business or professional community, CD-ROM will rival other large-capacity information delivery vehicles because of its low-cost replication and sturdy nature. All this assumes that the costs of making discs, from beginning through mastering and replication, will become less expensive, and it will.

.... CD-ROM drives ... will be available as standard or optional items to mass markets....

Copyright Resolution. Many publishers are already working on titles containing multiple sources, and for them the greatest barrier is confusion about the applicability of copyright laws, both nationally and internationally. By necessity, resolution will be sought, and in so doing, new avenues for publication of multiple-source CD-ROM titles to vertical markets will open.

Decreased Prices. Increased demand for CD-ROM hardware will reduce the variable costs of manufacturing and distribution, which will increase competition through pricing strategies. Given the price drops already experienced in single purchases of CD-ROM, unit retail prices will be close to $300 in two years.

The Government as Publisher. With the standardization of CD-ROM, governments have already started to publish and will soon seriously commit to publishing on disc throughout many agencies. CD-ROM offers governments the opportunity for more efficient and timely distribution of their vast databases, both for use within the government and by the general public. For governments, CD-ROM will be more than just an alternative or replacement for magnetic tape. It will be considered as the only means to cut the costs of data distribution. Increased paper costs, storage requirements, and postal rates will provide a strong incentive for this change.

Software on CD-ROM. Software publishers have already begun to get into the act. The economics of distributing software programs on discs compared with magnetic tape, for example, are easily calculated. To assure legitimate use, however, issues such as access to application programs and security of the packages must be resolved. Much progress has already been achieved in the area data encryption, although few firms are willing to venture forth into the limelight quite yet.

"The All–Purpose, Personal Publishing Machine". In 1986, Fran Spigai dubbed the microcomputer as "The All–Purpose Personal Information Machine" in her speech on trends in electronic publishing. She also reported, based on a survey of online database service executives, that CD–ROM as a publishing medium was tops on the trends list.

Time passes and times change. Fran's Personal Information Machine or, as some say, information delivery/retrieval system is still in the process of "becoming" and the characteristics of this new All–Purpose tool combines all earlier capabilities –– those of a microcomputer per se and of an information retrieval system –– but now adds a third function previously considered as separate. The third function is publishing and the corresponding result is knowledge.

To understand this progression, one must view the transition in two simultaneous paths. One path is the movement from data to information to knowledge –– an amorphous sequence dealing with communications. The second path deals with a physical system, both hardware and software. The movement from PC to a retrieval–of–information system to a publishing system is tangible and therefore more easily understood.

As a result of having an all–purpose, personal publishing system, individuals may acquire data, seek information, and gain knowledge. The hardware with appropriate software may be a combination of many known peripherals, but the intent will be total integration of functions and capabilites.

The personal publishing system does not yet exist. It will, but only after a period of time when publishers and distributors and system integrators and end users have had sufficient experience producing and using information retrieval system begin to understand that –– once again –– the surface has only been scratched.

Multi–Media CD–ROMs. Just as the first year for CD–ROM centered around getting used to having so much textual data on a twelve centimeter disc, the second year focused on retrieving and displaying the data. The third year firms attempted to combine text with images and audio. Future years for CD–ROM will see a constant evolution of changes, based sometimes on the introduction and use of new products such as Digital Video Interactive (DVI), often on the ingenuity of those developing software, and increasingly because end users will constantly voice a desire for new features and capabilities having purchased and used earlier products. The movement will be steady, uphill and unending.

> ...Future years for CD–ROM will see a constant evolution .... the movement will be steady, uphill and unending....

The Standard User Interface. I get a lot of telephone calls. One such caller was on a brain–picking–for–free mission. He had just spoken to another industry consultant who had statedemphatically that there would SOON be a standard user interface. He wanted my reaction. I laughed.

In some ways, such consistency would probably make life easier for both publishers and users of CD–ROMs, but it will not happen––really––nor should it. Certainly, there will be more cónsistencies among user interfaces. Bela Hatvany suggests we all designate the F1 key for Help, yet today I critiqued a system that had a Help button and an F1 key (Sorry, Bela). Apple's HyperCard is an attempt at a standard, but early standard setting and adoption usually means later changes and enhancements.

Almost by definition, a user interface must be unique––for the database, for the user, for the application, and so on. What will become standard, maybe assumed is the better term, is the existence of certain capabilities, without which an interface and the corresponding retrieval capabilities would be considered less than sufficient.

Large Databases in Small Spaces. This overall trend has many themes––data compression, distributed information systems, from library shelves to desktops, from mainframes to micros, from file rooms to optical media, from cartons–full delivered by freight to a sturdy envelopes delivered by courier, from volumes to a disc, from days to minutes, from unwieldy to utilitarian.

I have revisited the book, Small Is Beautiful by E.F. Schumacher many times. Each sentence is provocative and pertinent. Schumacher writes, "What is it that we really require from the scientists and the technologists? I should answer: We need methods and equipment which are

- cheap enough so that they are accessible to virtually everyone;
- suitable for small–scale application; and
- compatible with man's need for creativity.

The book was published in 1973. The thought remains viable. With CD–ROM, the coast is clear.

[Linda Helgerson is President, Diversified Data Resources, Inc., Falls Church VA, and Editor & Publisher, CD Data Report. This article appeared in the February, 1988 issue of CD Data Report and is reprinted here with permission of Langley Publications, Inc.]

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POLE POSITION

My All-time Favorite

Review by Jerry Drake

When the home version of an arcade classic is released, quite often it is inferior to the original. One of the most exciting things that can happen is for the newer program to be as entertaining and, in some ways, an even better product than the original. *Pole Position* for the Atari home computer is such a case in point.

This was a surprise for me when it came out. First of all, it was released on cartridge. Cartridges were notorious for not having enough memory for good games (although Atari had not failed in any of its previous arcade conversions onto cartridge). Secondly, the arcade version boasted some very impressive graphics at the time (and they still are superior). Thirdly, the arcade game was played with a steering wheel, a stick shift, and an accelerator. How were these three instruments going to be approximated effectively by a joystick and a fire button?

For Atari, backing down and saying that it was not possible was not in their vocabulary. Besides, the arcade version quickly was becoming an all-time favorite, so there was money to be made. Atari must have put their best programmers on it because what came out was superb. As a result, *Pole Position* reigns as my all-time favorite cartridge for the Atari 8-bits (better than even Star Raiders).

The cartridge graphics are exceptional. The screen is attractively colored; cars are crisp and well drawn; and animation is fluid. While not up to those of the arcade *Pole Position*, the graphics sure blow away those of most games for the Atari. As for the equipment, the car handles smoothly and responds quickly and accurately with the joystick. To top it off, the sound effects are identical to the arcade version's.

The basic premise of *Pole Position* is standard. You are racing your car at an unbelievable speed. Your object is to finish the lap in a set amount of time. First, you have to qualify to race. This is accomplished by completing one lap of the race in a set amount of time. How quickly you complete this lap also determines your position in the race. A real good time gives you the pole position (and you thought there wasn't a reason for its name). After that you must complete anywhere from one to eight laps in the required time. Every lap contains more and more opposing cars. The course is always the same.

The only visual parts missing from the home version are the absence of the ads on the billboards you pass by, and there is no lady telling you to qualify to race. The programmers, however, did preserve the Fuji Mountain.

Playability is about 95% of the original's. For example, there is just no substituting a joystick for a steering wheel on that one hairpin corner.

The home version does let you select from four difficulty levels (they call them courses), and you can select anywhere from the one to eight laps needed to finish the game.

The home version of *Pole Position* is an exceptional cartridge and is a must for every Atari owner's library. Since it's a cartridge it is also easy for a quick game.

JUNGLE HUNT

A Very Tasty Classic

Review by Joe Pietrafesa

The natives are restless, and they have captured the love of your life. It's up to you to save her from becoming chicken soup! You are a famous adventurer, and you have four hard tasks to perform in order to rescue her from certain death. So into the jungle you go; just listen for the jungle drums.

To start *Jungle Hunt* you must put the game cartrige into the proper game cartrige slot. Turn on the power, and the heading "Jungle Hunt" will appear on the screen. By pressing the Option key you may select what level you want to play: Beginner, Regular, or Advanced. By pressing the Start button the game will begin play. During the game, if you should need to stop, press the Space Bar. This will pause the game until the bar is pressed again. By hitting game reset, the first board will appear.

The object of the game is to rescue your darling love from the savage headhunters in less than eight minutes by completing the four tasks as follows:

ROPE JUMPING: Probably the easist task of the four. The swinging vines go back and forth at a certain time. You must time your jumps perfectly as the ropes swing. One miscalculation, and down through the shrubbery and dense jungle you will fall. On the advanced level, monkeys climb on certain vines, so watch out because they will try and knock you off if you jump on the vine.

RIVER SWIM: A pleasant little swim through a nice clean river? Wrong! These waters are infested with alligators--mean and hungry! You are carrying a knife so you are able to gut the suckers if they get in your way. Remember, you also have to come up for air. At the top of the screen is your air meter. Watch it because when you get low you have to go to the top to come up for air. If you

complete this, you are half way toward saving your girlfriend.

BOULDER DODGE: You're climbing an innocent hill, but you find out you started an avalanche. Huge rocks are coming at you, and you don't know what to do. JUMP! That's what you have to do. The boulders come pretty fast so you'd better be quick. By pressing the joystick up and pressing the fire button, you can do a super jump for when those big boulders come. You think the boulders will never stop, but after awhile they do. Now you're ready to face your last task.

THE RESCUE: You can see your girlfriend, dangling over a huge pot of boiling water, ever so slowly being lowered to her doom. The cannibals are doing some wild, exotic dance in which they are coming together and going apart. You must hurdle over them and jump on the rope to save your mate from the jaws of death. After it's all over, you will never want to travel to the jungle again.

Although the graphics were impressive in 1983, they are a bit blocky now. Nevertheless *Jungle Hunt* is a classic. Not only is it an exciting game (sometimes you feel like you are in that jungle, and you can hear the drums beating), but all of its screens (particularly the fourth) are quite challenging.

So what are you waiting for? Get on your safari hat and your jungle boots. You've got a dinner date with some hungry cannibals, and your girlfriend is their main course. Save her and become the world's greatest adventurer by playing *Jungle Hunt*..

MOUSE QUEST

Enjoyable and Challenging

Review by Joseph Russek

Okay, all you arcade game addicts. A new enjoyable game is *Mouse Quest* by TDC Distributors, Inc. Marvin the Mouse not only is trying to save his girlfriend, but also is going to amass a fortune by gathering objects along his path. He jumps, falls, swings and runs in his quest, while trying not to die. You have five lives, and any death starts you from the beginning.

The game has a fair amount of difficulty, and there are no settings to lessen or heighten the amount of challenge. As a result, I was never able to get past the first screen. This screen features Marvin jumping from platform to platform. If he jumps too far, he dies. If he touches the resident dragon, or is hit by the monster's breath, his future is also cut short.

In order to view later scenarios, I called upon my resident 13-year-old expert, Anita. She quickly got to the second screen, which consists of a rope and platforms. Marvin must jump over the latter before they collapse and send him--you guessed it--to another early demise. Anita also made it past the grasping hand in the third screen, but at that point was too tired to play further.

Although the graphics are no better than average, there are some cute features, including the Mouse throwing up his hands when he "dies".

The music, however, was rather annoying. The single sheet instructions said "M" would stop/start the music. However, the music would not stop. Likewise, there is no way to jump to higher levels without repeating all the lower levels. Finally, joystick handling at times is difficult. In order to help Marvin jump, you must press the fire button and aim the stick at the same time. Occasionally, through no fault of our own, Anita and I lost one of Marvin's lives due to poor joystick reaction.

Except for these faults, the game is enjoyable and challenging. It has the swinging of *George Of The Jungle*, the dodging of *Popeye*, and mixtures of many other games. I hope you have more skill and luck than I do. Have fun.

[TDC Distributors Inc., 3331 Bartlett Boulevard, Orlando, FL 32811.]

Accent on Basic Computing

by Ron Peters

TO USE OR NOT TO USE, THAT IS THE ?

When computers first became available for the home market at a somewhat reasonable price, they were touted as the panacea of all home drudgery. They were going to solve all our problems. Right? WRONG!

Many of us soon found that the home computer was more trouble than it was worth for some applications. It often took longer to use the computer than it would to use a pencil and paper.

Let's take a look at some of these applications and see whether the use of a computer is worth the effort. Before we start, however, we should remind ourselves that the computer is a "number cruncher"--that is, a machine designed to take a large mass of data and process it in some way with a speed that cannot be matched by humans (or Mr. Spock).

Balance Your Checkbook! Here's a great application for a home computer--if you write hundreds of checks per month. Anything less than that is a lesson in futility. Most of us probably write about twenty or so checks each month, and it's fairly simple to keep track of this activity in pen or pencil right on the checkbook register.

Not Moe Hacker, however. He decides that he is going to use his little PC to keep track of his massive finances (20 checks) using a program called CHECKUM.

So, Moe buys the program for $49.95 (on sale) and boots it up (loads it into his computer), anticipating all that time he is going to save using this new wonder.

After about five hours of reading the not-too-well-written manual, Moe finally figures out how to use the program and begins entering those checks he wrote last month, one by one. He starts by referring to the checkbook register, which he has neatly kept in pen as he wrote each check, and transfers that information to the check ledger program. Each check entry requires that the date, check number, amount, payee, and memo data be typed and saved.

After all checks are entered, Moe then has to decide whether he wants the checks sorted by date, number, amount, payee or memo information. Once that decision has been made, he sends this information to his printer, anxiously looks at his printer and finds "garbage" being strewn across the fanfold paper. Either the program is not compatible with his printer, or he has to define a printer driver (a program that translates printer codes sent by the program to codes that his printer can understand). This is just the beginning of a long relationship.

You get the message. In the time Moe has already taken, he could have done his Income Taxes and waxed his car. Not to mention that each time Moe writes a new check he has to turn on his computer, load the CHECKUM program, and then load the checkbook data file to work on.

Time effective? Not really, but if you enjoy playing with this sort of program, go right ahead.

Recipe Files! Now here's a handy program for the average homemaker that uses frozen foods and a microwave! You can take those recipe cards (all 32 of them) and transfer them to a program that will retrieve a recipe by any key word.

Let's say you want to bake some cookies. Simple. Go upstairs, turn on the computer, load in the FOOD-BASE program, load in the FOOD-BASE.YUK file, ask to "see" all the cookie recipes, and then review the four or five "recipe cards" that the program selects. Once you have found the right one, send it to the printer and Voila! you have a printed copy of your favorite recipe. Now you can go back downstairs (don't forget to turn off the computer and put the dust covers on the keyboard and printer), pour yourself a cup of coffee and see what ingredients you will need to make these cookies. Oops, you are out of vanilla extract. No sweat, just get another recipe. (At this point, return to the 6th sentence of this paragraph and start over).

Christmas Card Lists! Wow, here's a real application for the home computer. Not only can you list the 65 names and addresses that you send Xmas cards to each year, but you can also track who returned the favor and who didn't so you can cross that name off the list. Neat!

You can also sort the list by name or zip code, just in case the list might grow to the size that you can send the cards bulk rate. And, (here comes the clincher, folks) you can print the names on labels and save all that time and effort of handwriting the envelopes! Slick!

Well, I won't go into the whole scenario on this one. Suffice it to say that after you have spent about ten hours learning how to use the program and typing in all the names,

Continued on Page 33

MOM AT THE KEYBOARD

Adventures with an 800XL

by Nina Kraucunas

Although we bought our 800XL four years ago, the kids only used it for games. So, for Christmas '86 we bought several boxes of books, equipment (and more games) from someone who was upgrading, figuring that with all that good stuff around, the kids would take an interest in programming. Later, I decided that I better start using it and maybe THEN they would take interest....

Unfortunately, all the instructions don't come when purchased en masse. The first book I grabbed from the top of the unpacked box was something about learning to program "Assembler". I didn't get too far! A few months later (when I next had some "free" time), I dug out a book of basic exercises for the Atari that promised to have me writing programs to compute my taxes and other things "in no time at all". Basic isn't capitalized because I thought it meant "basic" as in beginning... I soon found out that putting in extra spaces or missing a semicolon gave me my most common result: "ERROR", not to mention eyestrain. Sometimes it told me what line the error was on, other times I simply retyped the whole thing. This is not a good way to fall in love with your computer and my interest rapidly turned into frustration.

I even tried drawing with the Touch Tablet, which was much more comfortable for me since it was similar to the MacPaint program that I used at work. After completing a difficult drawing, I discovered that I couldn't print or save what I had done! Around this point (last May) someone in a computer store suggested I join a club (probably because they were tired of trying to answer my questions) and I saw a NOVATARI meeting advertised in the newspaper.

I spent the first half hour of my first meeting wondering if I was in the right place, as they kept talking about modems and telecommunications and there wasn't another women in sight. However, then Georgia took over and we split into the 8bit group (someone explained that's what I owned after I sat through a few minutes of the ST meeting) and I found helpful people attempting to answer my questions about drive numbers and DOS.

I went home and tried what they said, but I was so unfamiliar with it that I kept running into dead ends. For example, I got into DOS, but couldn't get it to give me a directory. I could see "A. DISK DIRECTORY", but each time I typed A (or disk, or directory... I tried everything!), it would ask me a question I didn't know how to answer "DIRECTORY-SEARCH SPEC,LIST FILE?" I tried typing in all kinds of words, never suspecting all I had to do was hit the RETURN button and the program names would all list themselves; CONTROL 1 would freeze the display; and typing a comma, the letter P, a colon and the return key would print it out ... ain't it amazing!

Now, nine months after joining, I find I can follow most of the conversations and that not everyone around me knows more than I do, although I still find it hard to believe they could know less. Most surprising, I somehow have been inveigled into being a program chair ... next year *-you who know something-* had better do it so someone who *-understands-* can plan some interesting programs! In the meantime, the Board is encouraging and I'm actually having fun with my computer and daring again to read some of the books (which I find much easier to understand now that I know how to turn on the machinery!). And, after I typed in Georgia's valentine (passed out at the January meeting) my son actually took over the computer and had fun figuring out how to change the words, color, intensity and size of graphic. Of course, he also managed to shut down the whole program. BUT now Mom knows how to save and load, so it didn't matter and HE thinks I'm COMPUTER SMART!!! (He's only 8!)

So cheers, see you at the next meeting! Maybe by then I can figure out where the time goes when you are using this thing....

ABCs (Continued)

your spouse will inform you that labels on Xmas card envelopes are crass, and he/she is going to send the cards regardless of whether a return card is received. Besides, you will never get around to updating the list until just before Xmas next year and by then your spouse will have become disgusted with the whole process and sent out the cards without the benefit of the computer list.

Now don't get me wrong. I'm not saying that the above uses are always a waste of time. Some people use their PC's for Xmas lists, recipe files, keeping track of stamp or record collections, etc., and find this use very productive. I am saying, however, that for small quantities it is quicker (and cheaper) to use a sheet of paper, a notebook or 3X5 cards. You decide.

But, please, don't take my word for it. Try it yourself. (Misery loves company).

Atari's Small Miracles

by Joseph Russek

BOX

A series of small boxes appear from both the top–right and top–left corners of the screen, and converge in the bottom–center, forming a large V–shape. The boxes are nicely colored, and there are high–pitched sounds accompanying the visuals.

```
2 GOSUB 100
5 GRAPHICS 7+16
7 SETCOLOR 4,TIMES*TIMES,2
10 FOR X=1 TO 75
11 Y=X
12 COLOR RND(1)*3
20 SOUND 0,X*(TIMES+1),10,4
30 PLOT X,Y
40 DRAWTO 12+X,Y:DRAWTO 12+X,12+Y:DRAWTO
   X,12+Y:DRAWTO X,Y
41 PLOT 160–X,Y
45 DRAWTO 148–X,Y:DRAWTO 148–X,12+Y:
  DRAWTO 160–X,12+Y:DRAWTO 160–X,Y
49 NEXT X
50 FOR C=1 TO 1000:NEXT C
55 TIMES=TIMES+1:IF TIMES=2 THEN END
60 GO TO 5
100 GRAPHICS 2+16:FOR T=1 TO 80:POSITION
  2,5:? #6;"COMPUTER GRAPHICS":
   NEXT T:RETURN
```

BRAINWASH

A screen reading "Project Brainwash" flashes color after color with a loud, continuous, high–pitched sound providing less–than–pleasant background music. This alternates with a screen containing a large X. Switching between screens becomes quicker and quicker until you are either screaming, or so brain empty that you decide to retire your Atari and buy an IBM.

```
1 REM BRAINWASH
5 D=500:Q=100:E=10:P=100:R=5
6 FOR S=0 TO 15
10 GRAPHICS 18:POSITION 7,3:? #6;
  "PROJECT":POSITION 6,6:? #6;"BRAINWASH"
11 D=D–1:Q=Q+100:D=D–Q:E=E–1:
   P=P–15:R=R–1
20 FOR ZZZ=0 TO D:NEXT ZZZ:FOR A=0 TO
  E:POKE 710,RND(0)*255:POKE 711,
  RND(0)*255:POKE 712,RND(0)*255
30 SOUND 0,10,10,8:FOR B=0 TO P+5:NEXT B:
   SOUND 0,55,10,12:FOR B=0 TO P+5:
  NEXT B:NEXT A
33 FOR C=0 TO R
35 GRAPHICS 23:COLOR RND(0)*3:PLOT 0,0:
  DRAWTO 156,0:DRAWTO 156,94:DRAWTO
   0,94:DRAWTO 0,0:DRAWTO 156,94
40 DRAWTO 156,0:DRAWTO 0,94
45 FOR ZZZ=0 TO D:NEXT ZZZ:NEXT C
50 NEXT S
100 SOUND 0,0,0,0:GRAPHICS 18:
  POSITION 7,5:? #6;"WHOA!!"
110 FOR G=0 TO 1000:NEXT G
```

BRASS

This old standard provides a lovely display of six brass cylinders, which appear from right to left in ascending order.

```
10 GRAPHICS 9
15 SETCOLOR 4,15,0
20 FOR Y=55 TO 0 STEP –10
30 FOR X=0 TO 24
40 C=X:IF X>11 THEN C=24–X
45 C=C+3
50 Z=Y+(X)
55 D=INT(SQR(144–(X–12)*(X–12)))/2
57 COLOR 15–C
58 PLOT Z,Y+7–D
60 DRAWTO Z,Y+7+D
70 COLOR C
80 DRAWTO Z,180–Y+D
180 NEXT X
190 NEXT Y
200 GO TO 200
```

GIGGLE

This one features a pattern of light dots surrounding a symbol whose colors are ever–changing. Sounds consist of discordant notes.

```
1 REM GIGGLE
10 GRAPHICS 23
20 X=0:Y=0
30 POKE 77,0
40 FOR A=1 TO 30:FOR C=1 TO 3
50 COLOR C
60 X=X+INT(RND(1)*15)–7
70 Y=Y+INT(RND(1)*15)–7
80 GOTO 20+70*(X>=0)*(X<80)*(Y>=0)*(Y<48)
90 PLOT 80+X,48+Y
100 PLOT 80+X,48–Y
110 PLOT 80–X,48+Y
120 PLOT 80–X,48–Y
130 SETCOLOR C–1,0,RND(1)*256
140 SETCOLOR 1+(C=1)–(C=2),0,0
150 SOUND 1,X,10,15
160 SOUND 2,Y,12,15
170 NEXT C:NEXT A
180 GOTO 10
```

SUPPORT YOUR ATARI XE/XL

Hardware and Software Developers and Us

by A. N. Williams Jr.

A firm support needs three legs to stand on. Support for your eight–bit Atari is really no different.

The first leg is hardware, both from third–party developers and from the Atari Corporation itself. Unfortunately, the third–party hardware manufacturers don't seem to count too much. Proof of this is that companies such as Astra Systems, Inc. and Indus Systems long ago had drives with double–density capability, but for the average Atari user, that didn't appear to mean a good deal. The truth is that until the parent company brings out an item in the hardware line, only hardcore computer users pay much attention to the third–party hardware. Few, if any, commercial software developers are going to come out with products that require a Supra drive in order to run properly, but they will produce software to run on an Atari double–density drive. After all, there are more Atari dealers, and software producers know that more Atari owners will buy Atari drives than lesser name brands, particularly ones that have even minor compatibility problems.

Atari must take the leadership, and if they're not leading, no one else is following. Fortunately, we're getting a lot more support from Atari now than we've received in the recent past. In this age of 16–bit machines with mega amounts of memory, Atari not only is still building the eight–bit machines, but is actively encouraging their growth. Atari has come out with the XEGS, the XEP80 device, and a new double–sided, double–density disk drive to complement everyone's eight–bit system. Good for Atari!

A example might be in order to show how hardware support from Atari might help with third–party software support. In an article in The Status Line, a publication put out by Infocom, Inc., Mike Dornbrook, Infocom's director of marketing, revealed that some of the company's new programs are not coming out for the smaller eight–bit machines such as the Atari and the Commodore 64, but that others would be produced for the C64 because it had a greater size limit than the Atari 8–bits. The piece contained a bar graph which showed the size limit of the C–64 as being about 180 kilobytes. The Atari was shown as being about 130 kilobytes, weighing in only slightly larger than the TI–99 at about 110 kilobytes. The size for the Atari system seems to be, interestingly enough, the size of the Atari single–sided, enhanced 1050 disk drive. The size given for the C–64 happens to be about the size of a single–sided, double–density disk drive.

With the appearance of the new Atari double–sided, double–densitydisk drive, perhaps Infocom will reconsider. This disk drive will hold about 360 kilobytes of information, about 2 1/2 times what the present 1050 holds, and four times as much as the older single–sided, single–density disk drive.

The second leg is the software developers. They support the system by providing good, reasonably priced software for the system. Although the size of the system isn't the only consideration on what software gets ported over to what machine, it has to be a limiting factor. A program can't be used on a system that is too small to hold it. And programs are getting larger, not smaller, so the people with the smaller systems will continue to lose ground compared to the people with the larger systems. If Atari sells enough of the new drives to encourage the software manufacturers to write programs for them, then that encourages the users to buy the new equipment and the new software to run on them. Everybody benefits. And the eight–bit machines are given a new lease on life. If no one buys, then both the hardware and software developers feel as if there is no longer any support from the users, and so they drop their support.

The third support comes from the users––from you and me. We must buy the equipment and the software. Without our financial support, no other support is possible.

But financial support isn't the only thing that we can provide. Talking to others who are either interested in getting a computer, or who already have an Atari and need help of one kind or another is essential. For example, a fellow I work with wanted a computer and found a PC he felt he could afford at $750. I asked him if he would get a color graphics card, a monitor, and so on as part of the purchase price. As it turned out, to get what he wanted he would have had to pay out over $1000. Instead of buying the PC, he followed my advice, and for under $100 purchased a 65XE. I gave him disks full of public domain programs, sold him bulk disks for what I had paid, and whenever he calls me up with a question, I am only too happy to answer it. As a result, he is having a ball with his computer.

Another way we can show our support is by our example. For instance, do we or do we not condone software piracy?

Continued on Page 37

PIECES OF EIGHT
by Len Poggiali

WHY I WON'T SELL MY CASSETTE RECORDER
(Unless Somebody Makes Me a Good Offer)

Three years ago, when I purchased my Atari 800XL, the price of Atari disk drives was still in the high $300 range. As it was nearly Christmas, and what was left of my modest financial resources were to be funnelled into presents for the family, there was no way I was going to come up with that kind of cash in order to "selfishly" buy myself a "toy". So I girded my loins, gritted my teeth, bit the bullet and decided to do without.

At first I contented myself by turning on the computer and running the three self-tests built into the system. This kept me entertained for nearly five minutes. Then, after borrowing a book entitled Atari Basic from a student, I set about teaching myself some of the more familiar commands. For a week or three I patiently hacked away, finally learning enough to design a rudimentary grade averaging program that a professional could have created while asleep from the beginning to the end of a respectable snore. I handed in my badge and moved on to another town.

This other "town" took the form of game cartridges, which were relatively plentiful at the time. Most of these contained arcade-style games, but my favorites were *Journey to the Planets* by Roklan (heard of them recently?), a puzzle solving/adventure/arcade program and *Submarine Commander*, Thorn EMI's excellent precursor of *Silent Service*.

By late winter I was beginning to realize the limitations at that time on cartridge software. For one thing, they normally held only 8K or 16K programs, so in order to own many more sophisticated titles I wanted, I would have to go to another medium. Also, while *AtariWriter* was on cartridge, in order to save my writings, I would need to store them on either cassette tapes or floppy disks.

There are decisions in the history of humankind which come to mind when I think of that day when I handed my Sears charge card over to a clerk in return for my $42.00 Atari 1010 cassette recorder. If Napoleon and Hitler had not invaded Russia; if Truman had not dropped the bomb; if I had kept my $42.00.

Napoleon, Hitler and Truman are gone now, but my 1010 remains. Lest the reader think I would view its demise with pleasure, or that I consider its presence among my computer paraphernalia the bane of my existence, kindly read further.

Initially there were some very good reasons, in addition to the vast difference in price between a recorder and a disk drive, for my making the decision to go with the recorder. For one thing, cassette software was beginning to fall out of favor with Atariowners, so that prices for programs often were dirt cheap. The total amount I paid for the eleven cassette programs I own was $45.00. In early 1985 one (or perhaps two) first-rate disk titles would go for that much.

Another even better reason had to do with availability. Certain educational and game software titles appeared only on cassettes or, if on disk, were very difficult for me to locate. Without a cassette recorder I never would have purchased the excellent five-cassette *Conversational Italian* program ($8.88) from Atari (hopefully it will help me survive my next European excursion), or experience the excitement of *Hellfire Warrior* ($2.99), a sequel to *Temple of Apshai* produced by Automated Simulations before they became EPYX.

There were, of course, some drawbacks, the two greatest being the length of loading time and the general unreliability of the tape medium. While programs such as the foreign language cassettes, which employed both speech and computer data on the same tapes, and the shorter (8K and 16K) tapes usually left the user waiting for no more than five minutes a load, the more complex, longer programs could take up to twenty minutes. Many was the time that I managed to shave, shower, dress and handle a phone call or two in the period that a 40k game would take to come up on the screen. I was well-groomed, clean, well-dressed, and popular, but I wasn't getting in much computer use.

The second drawback was even more perturbing. Quite often, after waiting twenty minutes for a program to load, I would be greeted not by the title screen but by a statement telling me that the load had been aborted, leaving me with the options of trying again or packing it in for the night. Even more frustrating were those less often occasions when I tried saving a Basic program, only to find that the tape or the recorder had not done their job. As a result, I took to making many back-ups, an obsession which was incredibly time consuming.

Why then will I not sell my

PIECES OF EIGHT (Continued)

recorder (unless someone wants to pay for it in American money)? Well, for one thing, I like some of the software I have for it enough so that I do use it from time to time. The thirty–screen version of *Jumpman,* for instance, is a much better game than the ten–screen cartridge sequel, *Jumpman Junior.* While Avalon Hill's *Legionnaire* is no match for newer war simulations, its play system is simpler and in some ways superior to many of them. In addition the beat of the drums of the barbarian armies as they approach my Roman legions still retains its nerve–wracking intensity.

One of my children's favorite games is on cassette, and I have yet to be able to get a copy on disk. I came very close a year ago, but my modem went down, and I missed my opportunity. The game is called *Dog Daze.* The premise is old; the graphics are blocky; the colors are sparse. My kids love it! If for no other reason, this game keeps me from selling my cassette recorder(un–less there's a buyer out there willing to buy my children as well).

A few years from now most computer owners will either have forgotten or never heard about the early days when cassette tapes were considered viable media for the storage of computer programs. Few of the computer tape recorders still will be in existence, and if one or two are in operation that will be a lot. I, of course, still will have mine, and by then it will be worth a bundle!

Support Your Atari (Continued)

Magazines are a big help also. They allow many people to get expert advice. The more user–helping–user–type magazines are those that are people–related, rather than computer–related. Publications such as *Atari Explorer* and *Current Notes*, both which publish few type–in programs and focus more on product reviews and information, and self–help and human interest articles fit into this category. *Antic* and *Analog* seem to be more concerned with type–in programs and so are more machine–related.

The new XE Game machine could open up a new source of support for the eight–bit Atari from people who have absolutely no interest in computers at all but who are interested in buying an appliance like a toaster, an iron, a word processor, a machine to set up a data base for home use, and a game machine for the kids. Plug in a cartridge, and you have your word processor. Plug in another cartridge, and you have your data base. Plug in another, and you have your game machine. We're not talking about power users here, but instead appliance users. Eight–bit or 16–bit, they don't care. They just want their home appliance, something that works reasonably well, and at a reasonable price.

As long as the eight–bit Atari machines have three strong legs to stand on, they will endure. It is up to us to do our share in supporting the system.

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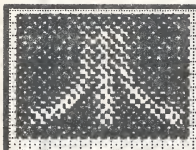

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REBEL CHARGE AT CHICKAMAUGA

A Superb Simulation for XE Owners

Review by Len Poggiali

On September 20, 1863, the second day of the Battle of Chickamauga, the only thing that stood between the Union Army of the Cumberland and total annihilation from the Confederate Army of Tennessee was a force of soldiers under the command of General George Henry Thomas astride Snodgrass Hill. How this desperate situation came about and what were its results are the subjects not only of SSI's *Rebel Charge at Chickamauga*, but also of a well-documented, well-written six-thousand-word essay at the back of the game booklet.

Although SSI's former Civil War games, *Antietam* and *Gettysburg: The Turning Point* both have received rave reviews from every quarter of the computer gaming establishment, *Rebel Charge...* is the first of the series that I have play-tested. One reason for my reluctance to purchase either of those products had to do with my disappointment with the other two SSI programs I owned: *Gemstone Warrior* and *Wargame Construction Set*. In the former case my dissatisfaction lay in my inability to complete the novice level, due largely to my ever-slowing reflexes.

WCS, however, was another story entirely. Although the eight scenarios which came with the game were enjoyable on the first encounter, they had little staying power. They were fast; they were at times furious; but overall they were thin. The construction set, while of medium difficulty to use, was time consuming and ultimately did not serve my purposes. For example, after spending hours designing a very attractive battlefield map of the Battle of Fredericksburg and setting the vital statistics and positions for the two armies, I began playing, only to realize very soon after, that as the Federal commander, I had no more chance of defeating Lee's army than the hapless General Burnside had had. The reason: units cannot outflank enemy forces. Without that capability my soldiers (as had Burnside's) marched up Marye's Heights to certain death. (Editor's note: For a more detailed description of *WCS's* weaknesses and strengths, see M. Evan Brooks' review in the October, 1987 issue of *CN*.)

While I was going through my usual agonizing pre-Christmas routine of determining what software I wanted Santa to surprise me with, Santa (in the guise of my wife) decided that the safest bet for her Civil-War-buff-of-a-husband would be *Gettysburg: The Turning Point*. Unfortunately, many other Santas in many other places were making this very same decision. By the time my Santa began making the telephone rounds from dealer to dealer on the mail order circuit, *Gettysburg...* was sold out, and my prospects for a fruitful Christmas were looking bleak indeed. Gettysburg is, after all, a more popular battle than Chickamauga (is there such a thing as a popular battle?), which possibly accounts for SSI's charging more for that game than for its other Civil War titles and for dealers selling out long before the holidays.

Now, although Chickamauga was not as interesting nor as bloody a battle as was Gettysburg, it nevertheless rates as the second bloodiest and certainly one of the more fascinating of the Great Conflict of 1861-1865. For the first day and a half of this encounter, the two evenly matched armies appeared to be headed for a stalemate. On the afternoon of the 20th, a tragic misunderstanding prompted a Union division commander to order his troops out of line in order to reinforce comrades far to their left. This movement left a large gap in the Union lines, which the Southern forces quickly filled, driving a large part of the Union Army off and forcing the rest to retreat to Snodgrass Hill for a final stand.

In this extremely accurate simulation, if the human player takes the part of the Union general, he can attempt to avoid this costly mistake, or if choosing to be the Confederate, he can attempt to exploit his opponent's errors more successfully than did the actual Rebel commander. There is also the real possibility that players not wishing to play the game historically, can manuever their armies in ways unlike those of their historical counterparts, and so fight a very different battle than that actually fought. This is one of the elements that guarantees purchasers a game that will not fizzle out with repeated playings.

That this program is so chock full of variations becomes apparent as soon as the Main Menu appears on the screen. The game may be played by a single player taking either side against the computer, by two players, or by the computer playing against itself. Three game choices are available: basic, intermediate, and advanced. Units may be hidden or not with either symbols (bars) or icons (figure profiles) to represent them. There are five settings for each of the following: level of difficulty, time of reinforcement arrivals, amounts of ammunition, and corps and divisional leader effects.

The first time I played *Rebel Charge...* I chose the default selections, which allowed for a basic

game, with me in the Confederate role, with hidden units, and the level of difficulty slanted moderately in my favor. After pressing RETURN I was presented with a number of menus showing casualties for infantry, cavalry, and artillery, (at the time all 0's, but soon to enlarge, particularly in the Confederate columns). The next screen informed me of what Union objective squares (X,Y coordinates supplied) I would have to capture and control in order to gain large amounts of points. Following that, I set the delay loop (controls speed of messages) to a medium speed, pressed RETURN, and was ready to begin playing.

After cycling through the opening phases of the game, the computer quickly brought me to the Confederate Operation Phase #1. At that point I opened the instruction booklet to the tutorial, which I followed quite closely at first.

In the Cursor Menu one can view the date, the time, the terrain, and the X,Y coordinates the cursor is over; center the map at the cursor; move the cursor in any of eight directions; go to the Combat Phase; go to a specific unit and access it for movement; toggle between the tactical (zoom in) and strategic (zoom out) maps; pick up the unit under the cursor; view the terrain with unit shapes removed; highlight all the squares that a unit can see; and go back to the last square where a unit was accessed. Each command is given by pressing one easy-to-remember key (e.g., "C" for Combat Phase), or one not-so-easy-to-remember key (e.g., "0" for cursor centering). Most command letters are displayed on the Cursor Menu, however, or are easily available within the documentation, so rarely does action slow down for long due to a forgotten command.

To access a specific unit, the player places the cursor over it and presses the Space Bar. This brings up the Command Menu. The unit information available on the Command Menu screen identifies the brigade commander, the type of force, the number of men, and their standard weapon; their efficiency, fatigue, and morale ratings; whether they are normal or routed, and set for melee combat or not; their Operation (movement) Points; their position, and where they are firing (if applicable).

Although a number of commands are the same or quite similar to those in the Cursor Menu, there are some important new ones. These include the ability to call up the Target Menu, which allows the user to move the unit; to view his line of fire and to pick a specific target, or decide not to fire at all; to split brigades into demi-brigades; and to engage the unit in melee (hand-to-hand) combat.

After positioning all units and plotting fire, the player then presses "C" for Combat, in order to enter the Combat Phase. At this point the computer takes over, cycling through a number of phases: defensive and offensive artillery phases; defensive and offensive fire phases; retreat and advance phases; a melee phase; reinforcement phase; etc. In my first game I avoided plotting melee combat, so the melee phase cycled through quite quickly.

During battle the computer goes from unit to unit, showing what enemy is being fired upon, and what are the casualties. Then -- and this is the part I do not like -- the process is reversed. In my first game, my Confederate forces suffered the greater losses. This was due to a number of reasons: my troops were greatly fatigued (and therefore lacking in efficiency) after long marches; my artillery was not always in place to support my infantry; and by the time I got to the enemy, they were well rested.

By the second game I had switched sides and was finding a bit more success for my efforts. The Union's defensive strategy is to stick near the major north-south road, wait to see where the main Confederate force is headed, arrive their first, rest a bit, then fight. Invariably the Rebel force moves north, in the direction of its major objectives, so it is necessary for the Union commander to leave only a token force in the south. With the remainder concentrated and often better rested than the attacking Confederates, I experienced more success than in my first trial by fire.

That is not to say that *Rebel Charge* becomes easy if one chooses to defend and wait for an opening to counterattack. It doesn't. It is, however, a bit less difficulty because, as the defender, one does not have to be as creative in one's movements as does the attacker. While one is getting used to the *Rebel Charge* game system, simple-mindedly countering what the computer player is doing is difficult enough.

After winning a few victories for both sides, the player will want to move on to the intermediate and advanced levels. These offer more realistic simulations and a number of additional play options. For example, the quality of a specific leader affects the outcome of combat. Fortifying and flanking also are possible in both games. Stacking of units, however, is allowed up to apoint in all variations.

Scoring is based on a number of items, including points for each man lost, guns captured or lost, and objective squares controlled. There are thirteen turns, each representing two hours of battle time. The average game might last about ten hours. Fortunately, the system allows for a game save twice during each full turn.

The game is played on a 54x64 map, with each square representing 200 yards. The strategic map fills the screen with a 40x20 view, while the tactical map allows for a 20x10 section to be viewed at any time. The game may be played on either

map--a refinement from the Gettysburg play system. This and other improvements all point up to the fact that SSI has invested, and continues to invest, a good deal of time, energy, and care on this game system.

David Landrey and Chuck Kroegel's game system and scenarios are difficult to criticize; nevertheless, there are a few things I would like to point out. For one, playing the game requires a fair deal of disk swapping, although I suppose that was inevitable considering how complex this program really is. For another, the game system only allows input from the player twice during each turn, during the two Operation Phases. While engaged in combat the human player must sit back, unable to make adjustments, watching the computer do all the work. One of the most annoying things I witnessed occurred when one of my brigades, right after forcing an enemy unit to retreat, advances into a vulnerable square. If I had had control of this feature, I doubt I would compromise my victorious forces by having them advance to such obviously dangerous positions. Finally, rather than providing three relatively similar versions of one battle, it might have been more interesting if the SSI designers had given us battles from the Ckickamauga–Chattanooga Campaign of 1863. Without extending the map a great deal, the smallish Battle of Lookout Mountain would have been an appropriate (and less time consuming) basic game; the Battle of Missionary Ridge would have been an ideal (longer) intermediate contest; and Chickamauga would have been an appropriate (lengthy) advanced scenario. This appears to be what SSI has attempted in their yet–to–be–released *Sons of Liberty*, which includes the Revolutionary War Battles of Bunker Hill, Saratoga, and Monmouth.

The SSI documentation is always better than average, but for *Rebel Charge* the company has outdone itself. In addition to a 26–page booklet containing directions, flow charts, maps, and the article mentioned earlier, an attractive, colored, laminated map of the battlefield has been included.

All in all SSI has given us a superb simulation of the second bloodiest battle of our bloodiest war.

[Strategic Simulations, Inc., 1046 N. Rengstorff Avenue, Mountain View, CA 94043, (415) 964–1353, $49.95.]

NOVATARI XL/XE PUBLIC DOMAIN LIBRARY

Announcing nine new disks since we last advertised here!(look for *) The price for mail orders is $3 per disk plus $1 for postage and handling for every 3 disks. Send checks, payable to NOVATARI, to Alan Friedman, 5951 Heritage Square Drive, Burke, VA 22015.

Any user group librarians who are willing to trade library disks write or call Roy Brooks, 4020 Travis Parkway, Annadale, VA. 22003, phone 703 750 0146. We trade with groups all over the world.

Demos

1: Miscellaneous
2: Movie Maker Clips
3: Heavy Metal Art
4: Miscellaneous
5: Desktop DOS + Demos
6: VizPics
7: Mandelbrot factal graphics
8: Hitchhiker's Guide to Galaxy
9: WIZARD of OZ
10:* Adventurers Companion

Education

1: Mathematics
2: Primary Language
3: Teachers' Toolbox
4: Word Builder 1.0
5: Animated stories
6: Geography
7: Bio+Chem with touch typing
8: Basic Math
9: Higher Math and Language
10: The Cell
11: Spelling Bee
12: Math Game
13:* Word Games

Games

1: Text Adventures I
2: Gambling
3: Simulations
4: Mazes
5: Parlour Games
6: Graphics
7: Action! Games
8: Arcade Look-A-Likes
9: Text Adventures II
10: Text Adventures III
11: Surf's Up
12: Ski King
13: 20 BASIC Games
14: Super Quiz A & B
15: Two Graphic Adventure Games
16: Space Lords
17: Pinball Games
18: Machine Language Games
19: Dandy Dungeon

Language

1: Fig-FORTH
2: ACTION! source codes (cf. GAMES 7)
3: ACTION! Graphic Demos
4: ACTION! Utility Programs
5: ACTION! Modules #1
6: ACTION! Modules #2
7: BASIC XL-REF Base
8: ACTION! Modules #3
9: KERMIT telecom
10: TURBO BASIC
11: Pascal Sampler
12: Searcher XL Turbo
13: Turbo Basic for 400/800
14: C Language

Music

1: TV/MOVIE Themes
2: ROCK
3: JAZZ
4: BASIC with animation
5: Ams Player: 12 Rock Songs
6: Ams Player: 14 Movie/Video Themes
7: Ams Player: 16 Oldies
8: Ams Player: 18 Classics
9: Ram130 AMS Beetles' Songs
10: MUSIC COMPOSER Songs
11:* Pokey Player
12:* M usic Major

Utiliity

1: MISCELLANEOUS introduction
2: Printers
3: DOS 2.5
4: Directory & Label Printer
5: Graphics Trilogy
6: Copymate XE
7: SCOPY sector copier
8: Translator Disk
9: 256K Upgrade
10: Daisy-Dot NLQ
11: Dos 2.6
12: MACHDOS 2.1
13: Print Shop Editor
14: Easy Find
15: Print Shop Icons
16: TEXTPRO 1.1
17: Print Shop Icons
18: Touch Edit
19: DOS 4.0
20: Graphics
21: 130XE upgrades + Utilities
22: HI-RES 130 (graphics)
23: Rainbow DOS
24: Font Master
25: 3-D CAD
26: Adelaide Symbolic Disassembler
27: DB's & Spreadsheet
28: Graphic Utilities & Pics
29: String Magic
30: Print Shop Icons
31: Hacker's Toolkit
32: Weekly Scheduler
33: Textpro 2.5r (telecom)
34:* Print Shop Utility
35:* Monitor/Debugger
36:* Diet & Nutrition
37:* General Ledger
38:* Super Copiers
39:* Atari Writer Drivers

Telecommunications

1: 850 Interface
2: 835/1030 Modem
3: MPP Modem
4A: AMODEM 7.2
5A&B Chameleon Terminal Emulator
6: 1030&850 Express (3.0 & 2.1)
7: Data Comm
8: AMIS XM10 BBS program
9: AMODEM 7.4 + Rverter
10:* Forem XE

THE PERUVIAN CONNECTION

A Look at Some British Programs in Latin America

by Augusto Rojo

[Not long ago I received a letter, a videotape of screens from, and reviews of a number of British 8-bit software titles from Augusto Rojo of Peru. What follows are edited, "translated" versions--Mr. Rojo admits his English is not so good--of what Mr. Rojo so kindly sent me. -LP]

I sell Atari computers here and work with some programmers. I bought my first Atari 800 in 1980 (16K). I also have an ST, but, for many reasons, it's usually in the closet. Here in Peru we don't have more than 200 STs because of the lack of business software in Spanish and the price.

I think you could review more new products if you look to England, since a good deal more software is produced there and at the right prices. For example, you can buy *Amaurote*, a 3-D, high-res game on tape for 2.99 pounds. Contrast this with $35 for a 2-D, 1982 *Lode Runner* on an Atari super cartridge. At that cost, cartridges have to be VERY good and can't be old programs that probably were pirated by many people.

Unfortunately, some British programs have certain compatibility problems on American televisions (un-redefined characters in backgrounds or some screens lost), while others will not run at all. Normally I buy programs from Miles Better Software, 221 Cannock Road, Chadsmoor, Cannock, Staffs WS11 2DD, England. I don't know ahead of time if what I order will work in NTSC, but Miles is fast (1 week) in sending me my order, and he accepts my VISA card. [N.B. The following prices are in British pounds. -LP]

MIRAX FORCE

Are you looking for a fast and furious arcade shoot-'em-up? If the answer is yes, then *Mirax Force* is for you. With very good graphics and sound, this game is close to some Nintendo "special games". It uses voice synthesis, and up to seven sprites/missiles are on the screen at the same time.

You command the Star Quest, a spaceship that needs to stop an alien fleet (original, no?), which consists of some motherships (one at a time) and many small fighters. Your mission is to destroy each mothership, shooting into its power reactor many times. Your ship is bi-directional, but be careful because a quick turn will send you into acceleration. As a result, you might lose control and strike parts of the mothership.

The game has a small bug which occurs between the title screen and the beginning of the game. The screen is filled with unredefined characters but only for a few seconds.

[Tynesoft, Cassette (6.95), Disk (8.95)]

NIGHTMARES

You are a solitary Faerie (these look like angels) who engage in combat with the evil forces of Lord Motohod. These include the small, but numerous Airflits and the large earth monsters, the Grunts. Your weapons are a bow and arrows, and lightning bombs.

This game is one of the more difficult I have played and truly merits its title. In many instances your shots don't make an effect on the monsters (perhaps this is a bug). The game has fifteen difficulty levels, with shapes and sizes of the figures different in each. Attacks are consecutive, and the only thing to help the player survive them are Faeries on the ground who will give you some energy. All enemies drain your energy if you touch them.

[Red Rat, Cassette (6.95), Disk(8.95)]

AMAUROTE

You are the hero of the city of Amaurote which has been invaded by a horde of bees. Your only weapon is the bouncing bomb of your Arachnus. The city has 25 different districts, and your time is limited. Your enemies are of three different classes. The scouts can fly and inform the Queen Bee of your position. The drones, the stupidest of the insects, exist to provide food for the Queen and to fight with you. Their movements are controlled by the Queen. The Queen, the most powerful of the bees, replaces each bee that you destroy with a new one. The speed of procreation is determined by the number of drones she has. A normal bomb cannot eliminate the Queen; for that you need a super bomb (only one at a time).

Amaurote is one of the few games in hi-res and 3-D. The graphics in the city are pretty and diverse. You need to be careful with the buildings, because if you miss your shot, your bomb will continue to bounce and will destroy part of the city (penalty in the score).

Other options in the game include being able to rescue your ship and teleport randomly to different parts of the city; to repair (up to three times per district) the Arachnus; to request more bombs from the mothership; to request the super bomb; and to use a scanner to find bombs, bees, or the Queen.

Some limitations are that you can shoot only one bomb at a time, and the game is slower the more bees there are on the screen.

[Mastertronic Added Dimension, Cassette (2.99), Minimal Memory: 64K]

[From what I saw on Mr. Rojo's video, this was the best looking and most unique of the games. The game appeared to be slow-moving, however. -LP]

GREEN BERET

Green Beret is a version of *Rush-'n-Attack* for the Atari 8-bits. You have the role of a green beret who invades a Russian base to kill his enemies. Your weapons are a knife and a bazooka. There are five levels in which you will see a variety of enemies. All are fast, so you need good reflexes to kill them.

[Konami, Cassette (7.95)]

PHANTOM

In this game you are a ghostbuster whose mission is to clear four different buildings. Each contains different floors with mazes filled with ghosts who you can banish with your experimental nuclear accelerator. This weapon only has a limited amount of energy, but in some rooms you can recharge it. Also, you need to find a key in order to climb to the next floor.

The game has good sound and graphics (the layout varies greatly from building to building). Phantom doesn't seem to have any problem with the NSTC.

UNIVERSAL HERO

[Mastertronic, Cassette(3.00), Minimum memory: 64K

In this totally nail biting, multi-dimensional, high-resolution, awesome arcade game you have only seven seconds left to save the planet. The game is similar to *Hacker* in that no directions are supplied. This makes the game more difficult (e.g., you can take and use some objects only in some screens). The only low point is the poor use of sound.

[Tynesoft, Cassette (6.95), Disk (8.95)]

CRASH LINE

- These games run with problems: *Domain of the Undead, Panic Express, Space Hawk, The Living Daylights*
- These can't run: *Astro Droid, Feud, Astromeda, War Hawk*
- These run but are very bad: *Frenesis, Winter Olympics, The Search, Ninja Master, Sprong, Robot Knight*

[I want to take this opportunity to thank Mr. Rojo for his generous contributions to Current Notes. For those who might be interested in writing him, Mr. Rojo's address is Bolognesi 952, Callao 2, Peru (Sudamerica). -LP]

PRINTPOWER

A Viable Alternative to Print Shop

by Len Poggiali

For a number of years now there has been little if any competition in the 8–bit market for an easy–to–use, menu–driven, multi–purpose print program. If one wanted to create and print attractive greeting cards, signs, banners and such, and do it all with one program, then Broderbund's *Print Shop* was not only the logical choice but quite likely the only choice. Fortunately, all that has changed now with the introduction of Hi Tech Expression's *PrintPower*.

In the past Hi Tech has been producing interesting specialized print programs (e.g., *JingleDisk*, *PartyWare* and *AwardWare*) and distributing them on Commodore 64/Atari 8–bit flippie disks. Many of these have appealed to user needs for such items as love note, party hat and placemat makers, etc. not satisfied by other commercial products Each new product has been an improvement on those which preceded it. *AwardWare,* for a number of reasons, constituted a giant leap: the documentation went from being a single sheet to a 28–page booklet; the packaging improved; and the program had more depth and sophistication.

Now, with *PrintPower*, Hi Tech appears to be taking on the big gun of print programs, and in most areas it is more than holding its own. What is particularly impressive is that Hi Tech has produced a comparable item and is retailing it at $14.95, less than half the cost of Print Shop.

Although *PrintPower* lacks the special effects and the rudimentary drawing program of *Print Shop*, these two features are not missed, particularly when one considers some of the more practical improvements *PrintPower* has to offer. Among these are the following:

- greeting cards come in horizontal and tent card formats in addition to the vertical format used in *Print Shop*;
- signs and posters also are allowed three (horizontal, vertical, and half–page) formats as compared to *Print Shop's* vertical only;
- banners may contain borders and multiple lines of text;
- while there only are six fonts (*PS* has eight), each may come in three sizes (eleven for banners) and seven (to *Print Shop's* three) variations (italic, outline, raised, etc.);
- graphics may be laid out in seven different sizes (three for *Print Shop*) from 1/2" to 8";
- forty different border designs are supplied, a good deal more than the nine *Print Shop* has to offer.

In addition to these superior features, *PrintPower* also boasts line–by–line text editing, an on–screen template to help the user visualize the final product, sixty graphics with free–form positioning, and the option of loading *AwardWare* graphics onto *PrintPower* layouts.

Not to be outdone in any way by its venerable competition, Hi Tech Expressions will be releasing, in the very near future, a PS Companion–type program (*PrintPowerPak*), which will contain a calendar function and additional graphics.

The company also supplies a toll–free technical support service, which I have used more than once. The people at Hi Tech always have been quite friendly and, more importantly, equally helpful.

Using *PrintPower* is not difficult at all, and reading the documentation is hardly necessary. By carefully following the on–screen menus, directions, and the Help screen, most users should be able to create in no time very attractive products.

From the Main Menu one first should call up the Printer Set–up program. An Atari–specific instruction sheet will guide you in selecting the appropriate printer driver. In my case, for my Panasonic 1091, I chose the "Non ESC–2 Epson/IBM" driver. Also I eliminated line feeds because my printer kept skipping a line after each print line.

Returning to the Main Menu and before loading one of the print programs, I selected the option which allowed me to convert my AwardWare graphics disk to PrintPower format. This took only a few seconds, and the process did not ruin the graphics disk for use with the AwardWare program.

For my first few tries I followed the on–screen menus without referring to the documentation. My only difficulty was in having my graphic print out to paper. The text and borders were fine, but where the graphic was supposed to be was only an empty space. The fault was not in the program, but in me. In order to position the graphic onto the template representing the page, one must use the cursor keys. Then once it is in position, in order to set it, the user has to hit the Space Bar. If multiple copies are required, the same procedure should be followed for as many copies as needed. When all graphics are in place and set, the RETURN key must be pressed so that the program will remember what graphic choice was made. My problem was that I was not hitting the Space Bar; therefore my graphics never were being placed. If I had read the on–screen directions closely, there would have been no problem.

Later, in order to create a greeting card, I followed the in-depth tutorial (drawings of all menus plus text) supplied in the documentation, as I cycled through approximately seventeen on-screen menus, making choices at each juncture. These may be made either by moving the cursor down to the choice and then pressing RETURN, or more quickly by pressing the appropriate letter key (usually the first letter of the word) given for the option chosen (e.g., "T" for tent card). This feature really speeds up the process when one is making a graphic selection. Instead of moving the cursor through sixty graphic names, one merely has to hit the letter a graphic begins with, and he will be taken to all of the graphics that begin with that letter. Then positioning the cursor on the graphic needed only take a few seconds.

The text editor is easy enough to use, particularly since it includes a Help screen. It is in this editor that additional fonts may be loaded (to a maximum of four for any print-out), font variation may be employed, and print may be enlarged or diminished.

The next screen offers the options of printing the card, starting a new card, or returning to the Main Menu. If one chooses to print, then the next menu is where the user may opt to abort printing, print a rough copy, or a final one. Assuming one chooses a print directive, the screen will begin to fill with a variety of numbers, symbols, and assorted gobbledygook, and printing will begin. In a few minutes (more if you choose Final Draft) something every bit as attractive as a *Print Shop* copy will be produced.

Although overall *PrintPower* is an excellent program, it is not without its faults. While the templates are nicely representative of the real thing, the graphic symbol used gives the user no idea of what the actual graphic will look like. Not only is that feature supplied in *Print Shop*, but graphics can be accessed in that program by merely using a number, a much quicker way than by moving a cursor to the graphic selection.

A good deal more disk swapping is required in *PrintPower* than in *Print Shop*, particularly if one employs the *AwardWare* disk. In that case three disks must be juggled back and forth.

Finally, the documentation is not always adequate, especially at the most difficult times. Since the booklet is not Atari-specific, occasionally one receives misinformation from that source. The Atari sheet provided is okay, but is somewhat lacking in details, particularly those pertaining to choosing the correct printer setup and line feed setting.

Despite these minor flaws, *PrintPower* is a must for anyone not owning *Print Shop*, and not a bad deal, considering its more-than-reasonable price, even for those with *Print Shop*. My respect for Hi Tech Expressions, and my enthusiasm for the company's products grow with every new release.

[Hi Tech Expressions, 1700 N.W. 65th Avenue, Suite 9, Plantation, FL 33313.]

TIPS'N'TRAPS

by Jim Stevenson

Hey, all. T'N'T #31 coming around the bend here. Unfortunately, as I have mentioned in the previous article, Electronic Age has gone down. I've gotten word that the SysOp has been selling his equipment, so chances of getting messages on that BBS are at nil. And, due to lack of interest, I've decided not to take any more messages from ARMUDIC (the latest message on the base was dated sometime back in Sept/Oct. of '87). So, we now come to Merlin's Litterbox (ML), the sole source of T'N'T rag. Too bad, but that's how it goes sometimes. However, because of the incredible amounts of messages that are showing up on ML, T'N'T still survives, thanks to Sam Wright, SysOp, and all his adventuresome users. Anyway, on with the column, and I'll see you next month. And remember, got a problem, call us:

Me (Jim: voice only) ..... (703) 378–3540
Merlin's Litterbox..... (703) 250–7303

SUNDOG

Q. When I get into battle I can never find the enemy ship and I get blown away. Is there an easy way to find the enemy?

"Elric Stormbringer"

A. Yes there is. You have to line up the vertical and horizontal scans together. Then you should be able to find your man. By the way, the first thing you should do is to go to Woremed and get a G–Scanner and a cloaker that will help a lot.

–Robert Clark

Q. Does anyone know how to fire the stinger? I had about 50,000 bucks and I stayed at a hotel and all my money was gone, so now I have to build up the money supply again.

"Elric Stormbringer"

A. Left button moves, right button fires.

"Max Quordlepleen"

DUNGEON MASTER

Q. I'm on the level after the water elementals with the spiders and the guys with blue heads and tentacles. What am I supposed to do? I have a ruby key and a cross key and I have found a decorated door w/o a keyhole and a gate w/o a keyhole, switch, or anything. All I'm doing now is running around dodging those blue–headed guys. Is there any easy way to kill them? Any help at all is appreciated.

"Raven"

A. Ignore the blue headed guys in the hall, they're a red herring, unnecessary to solving the game. To open the decorated door, you have to get past the invisible pits the other way from the stock of blue–headed elementals. There is a secret passage off the corridor there, with a brick–button in it, push the brick and go back to the ornate doors, they should be open and you can get the topaz key.

"Max Quordlepleen"

Q. Where is the OTHER key? I have been on this level in numerous games, and I always have to choose between 1 of 2 locked doors. I know that behind the first is 1 green box, and behind the other are 2 green boxes. Being a stingy type, I want all 3. These guys come in handy later. Any hints would be appreciated.

Andy Libby

A. Okay, hang in there. Which keys did you get? There's a key in the Riddle Room, and there are also keys in the rooms off to the right when you enter the corridor after the Riddle Room. If I know which keys you got, I can help you get the ones you didn't. By the way, you're right. The boxes DO come in handy later ...

"Reforger"

Q. I got the key in the riddle room, the key in the "MIDAS" room, the key in the "KEEPER OF COMBINATIONS" room, and the key behind the door in the room with the pit,screen, and lever. I also got the (solid?) key in the room with the screen, door, screen (had to shed lots of KGs for this one). I also have 1 RA key to use on level 7 and 1 leftover gold from a previous level. I have tried using the gold key and it doesn't work. I have been all the way down to the rat level but started again to find all the goodies I may have missed on the first couple of tries. Syra and the gang are eagerly awaiting some hints on this annoying problem

Andy Libby

A. I think you already got all the keys on Level 6. By my count, you got 5, right? It takes 3 to get to I HATE COWARDS, one to get the green box behind the door, and one to get into the corridor with TEST YOUR STRENGTH. What's left? By the way, if it's green boxes you're after, have you got the one in the maze beneath the pit in the pit–lever–screen room? The gold key is now useless to you. If you've got Halk in your party, he can use it pick his teeth, I suppose. The RA key is useful, of

TIPS'N'TRAPS (Continued)

course, but you've got to hunt down the other ones. Down, down, always down. You'll get to Level 12 before you've got all the keys you need to finish Level 7.

"Reforger"

Q. After you have the third Ra key is Dungeon Master is it necessary to keep going or can you just turn around and go back up to level 7? I tried to keep going but I ran into two knightswho I can't kill. Does anyone know of an easy way to kill them?

"Raven"

THE PAWN

Q. Can anyone "shed some light" on how (and where) to find what the guru wants??

Dave Lee

SPACE QUEST 11

Q. What do I do after I have gotten to Vohaul's asteroid? I have explored it fully and am at an impasse.

Anonymous

TECH-SPECIALITIES HARD DRIVE

Assemble A Hard Drive For Less

Review by Jeff Greenblatt

If you are considering purchasing a hard drive, an ST owner has several choices. Atari, Supra, ICD and Astra all offer an array of hard drives in various capacities to fill your needs and dent your wallet.

Up until recently, if you were considering building your own hard drive from scratch, you had to purchase a host adapter (interface),a controller,a hard disk,a power supply,a case and cables separately. Unless you know about electronics, building a hard drive from scratch is not a simple thing to do. Moreover, there was always the question as to whether it would work once it was assembled. If it didn't work, you were several hundred dollars in the hole and now you have to pay a technician $40–$50 an hour to figure out what's wrong. It could be any of the components or the cables.

The Solution

Tech–Specialities Co. of Houston, Texas has the solution to this problem with their expandable Hard Drive Kit. For $299 retail, they provide everything you need, except the hard disk(s) in their kit. They call it a kit, however, the only assembly required other than opening the case, is installing the hard disk(s) and plugging in three connectors to each hard disk.

Their Hard Drive Kit consists of a handsome beige metal case measuring 3" High X 15" Deep X 18–1/2" Wide which has a fairly large footprint. Tech–Specialities suggests that the monitor be placed on top of the unit. If you own a Mega ST, it will fit nicely on top of the case thereby making the Mega's floppy drive more accessible. The case has an opening in the front which is to be filled by the face plates of the drive(s) when they are installed. Attached to the case is a 1/2" diameter 6 foot long cable which is terminated into a small aluminum case which contains the Host Adapter. Both ends of the connecting cable are firmly attached to each case. Reportedly, the Host Adaptor is made by Atari. A 9" long cable with standard 19 pin DMA connectors on each end, plugs into the Host Adapter case and the ST for the final connection. The beauty of this arrangement is that the cable can be up to 20 feet long; so the Hard Drive can be placed just about anywhere.

If you have ever seen other hard drives, such as Supra's, the connecting cable is very short. This is because it's a DMA cable, which is limited to 3 feet because it becomes unreliable due to noise beyond that length. A SCSI cable on the other hand has a limit of 20 feet before it becomes unreliable. By placing the Host Adaptor close to the computer with a SCSI cable between it and the Hard Drive case, the 3 foot DMA limit can be exceeded. However, I found that the 9" DMA cable supplied was too short, and was thereby not flexible enough to move the Host Adapter case to an out of the way location. This will cause some problems for those who have limited desk space between the keyboard and the monitor. Tech–Specialities should consider providing a longer DMA cable, perhaps 18–20 inches long. They should also put some rubber feet on the Host Adapter case so that the screw heads on the bottom of the case don't scratch the top of the work surface.

The Hard Drive case contains an Adaptec 5500 SCSI controller card, a 65 watt power supply, a mounting bracket for two half–height hard disks, associated cables and a cooling fan. The case is totally sealed. The hard disks are cooled by the fan, which draws air from the slots in the face plates of the hard disks and vents it out the rear of the case. After 7 hours of continuous use, the case wasn't even warm. The cooling fan does an excellent job of prolonging the life of the hard disks.

Expandibility

Tech–Specialities advertises their kit as expandable. Although the case can house up to two half–heights, the controller card they supply has connections for up to four hard disks. So, you can start off with one hard disk and as your appetite for more storage increases, you can add additional hard disks. Obviously, once you go beyond two, you have to add another case, power supply and cables.

I decided that two 40 meg hard disks would suite my immediate and future needs. Economics also had a role in this choice. I purchased two Seagate ST 251 hard disks for $350 each. Once you exceed 40 megs, the cost of half–heights increases dramatically. Although full–heights are more economical, the case is not high enough to accept them. Note that the hard disk mounting bracket is drilled out to only accept 5 1/4 inch hard disks. If you want to use 3 1/2 inch hard disks, the mounting bracket will need to be modified to accept them.

The kit I received did not come with an installation manual. Tech–Specialities is about to print one .

For the average user, a manual really is essential. Upon opening the case, I was greeted with an array of cables marked 1 and 2. Upon close inspection, I realized that I had to remove the mounting bracket attached to the bottom of the case, in order to secure the hard disks to the bracket from the underside of it. The only problem was that one of the nuts holding the bracket in place was concealed by the controller card. Removing four screws and the SCSI connector gains access to the concealed nut.

But for a Screw

My kit came with four screws to mount the two hard disks to the bracket. Unfortunately, each hard disk requires four screws to secure them properly. So, I was off to the hardware store to buy 15 cents worth of screws. The holes in the mounting bracket are slotted so that the position of the hard disks can be adjusted to fit properly. I found that I had to move them all the way to the right so that the controller card would align with its mounting posts. If you add a second hard disk the terminating resistor pack must be removed from the first drive.

The mounting bracket is marked with a 1 and a 2 to identify where each hard disk is to be connected to a similarly marked cable. Although the edge card connectors on the hard disks are slotted so that the cable connectors are not inserted backwards, the connectors supplied with the kit don't have spacers in them to prevent you from doing this. Since the edge card and the connector have pin numbers marked on them, it was easy to figure out which way they go.

Normally, when you add hard disks to a system, the disks must be configured to select which one is number 1, 2 and so on. This is accomplished by configuring them with a jumper on the drive select pins. Tech-Specialities eliminates the need for this by configuring the cable for drive number 2 by twisting the pairs. This assumes that the hard disks you have are jumpered for drive number 1. Unfortunately, the drives I purchased were jumpered for drive number 2, so when I powered the system up, nothing worked. A quick call to Tech-Specialities had the problem isolated in 10 minutes. Another problem I encountered was that the cooling fan didn't work due to a poor electrical connection. This, too, was resolved in that same 10 minute phone call. I was amazed that I could get technical support on a Saturday of all days.

> ....I never dreamed that I would have 80 meg ... for under $1,000....

The kit comes with a floppy disk containing software to Format, Boot, and Park the hard disks. Documentation for their use is also on the disk. Although it's not as elaborate as Supra's or ICD's software, it's enough to get the system up and running. Incidentally, I tested the system with Supra and ICD software and the kit performed flawlessly. It also performed flawlessly with the Magic Sac.

All in all, it should take no more than half an hour to assemble this kit, and it's well worth the price. I never dreamed that I would have 80 meg of hard disk capacity or even half that amount for under $1000. As a matter of fact, it cost me more than $1100 to purchase my first two 20 meg Supra drives.

Less Expensive

I highly recommend this kit, and if you purchase it, make sure you buy 5 1/4 inch, MFM, half-height, IBM AT type hard disks. These are bare drives without a controller card. They are less expensive than IBM XT type drives that come with a controller card and rails. A good source for these drives is Computer Shopper, which can be found on most news stands. Additionally, if you start off with only one drive, you will need to purchase a face plate to fill the remaining opening for the second drive. A piece of black cardboard will also work until you can find one.

By the time you read this review, Tech-Specialities will be offering an improved Hard Disk Kit which measures 3 1/2" High X 15" Deep X 13 1/4" Wide. The width of this unit is the same as the Mega case. This kit will accept up to three half-height drives, or one full-height and one half-height drive. Access to the mounting brackets is also to be improved since the controller card will be placed under the half-height mounting bracket. The retail price for this kit will be $295.

For those of you who are serious power users, Tech-Specialities intends to release a Tower Kit for the ST in July of this year. This kit will accept up to five half-height drives or one half-height and two full-height drives. It will come with a massive 150 watt power supply and a built-in monitor switch. According to Tech-Specialities, it will also accept floppy drives. The tentative retail price of the Tower Kit is $385. This baby will easily hold 200 meg of hard drives.

Tech-Specialities also offers their kits with hard drives installed. Check with them on availability and pricing. To sum it all up, if you're considering purchasing a hard drive, their kits are a best buy for the money. Their phone number is (713)-590-3738.

PASCAL COMPILER UPDATE

"Don't you have anything else to write about?"

by J.Andrzej Wrotniak

As some readers may remember, both Prospero and OSS (now ICD) recently released new versions of their Pascal compilers (see *Current Notes* of last February and December, respectively).

Since then, updated versions of both were released. In particular, both compilers now can be used for desktop accessories. Here is the news--and more.

Prospero Pascal

The newest version of Prospero is 2.12 (it arrived on the very day the March review was being printed). The chances are that this is the only version ever distributed to the dealers in this country--my review copy v.2.10 was one of the very, very few.

The new version does compile accessories: just compile as usual, and change the extension to ACC. So simple--the manual does not even mention it.

Some other, very minor, bugs were also corrected (using the compiler heavily all the time I never caught those!). The compiler and linker were reasonably speeded up: total gain for a 100k program is about 35% (now it takes about 3.5 minutes from a RAM disk).

My friend and co-worker (and a master Modula-2 programmer) John Antoniades bought a copy and used the Prospero debugger (I had neither time nor need yet). The debugger is excellent--you will have to take John's word here.

The compiler is still a little slow, but excellent modular features, very enjoyable user interface and superior documentation make it my favorite ST programming tool.

Prospero Pascal on the IBM PC

The IBM PC version is also out. My company just bought a copy. And indeed, an ST program just recompiles and runs on the PC under GEM (as long as you do not use machine-specific GEMDOS, BIOS, XBIOS or Line A calls, but many of these are replaced with higher-level routines, identical on both machines).

Warning: if you are using the resource construction set for your ST programs, you will also need one for the PC, because the resource files are incompatible between both machines. A real nuisance, and at $400 the GEM Developer's kit from DRI is a rip-off. No wonder that the only GEM-based programs I've seen on the IBM are the ones sold by DRI. Anybody heard about a translation program?

OSS Personal Pascal

ICD/OSS (really the CCD in Germany) also did some cleaning up of *Personal Pascal*. The major improvement in the new version 2.02 is that it compiles accessories (just set the compiler switch). Unfortunately, one major bug--not accepting procedure names as procedure parameters--still remains. Not many of us may need this feature, but those who program numerical applications, do--and badly.

With this exception, *Personal Pascal* is a solid product; all other bugs are minor and can be easily worked around. ICD can now be reached in the Atari16 forum on CompuServe, and your questions are answered promptly.

What I do not like too much, is ICD's update policy: they are asking $10 (and your original disks, of course) for each new version, and the only improvement is that some bugs are cleaned up--the bugs which should not be there in the first place. Ten dollars is more than a nominal fee to cover the costs (which would be understandable), and at least another ten will be needed before the compiler works as advertised. Who said that *Personal Pascal* is less expensive than *Prospero*?

My compiler can beat your compiler...

In addition to being much faster, *Personal Pascal* also produces significantly more compact executable programs. A simple ASCII printout utility (CN Public Domain disk No. 220 from April) takes 10k less in the OSS version than in Prospero's, being as identical in both incarnations as possible. Here are the numbers (RAM disk used in both cases):

	Personal Pascal	Prospero Pascal
Source code size:	16.6 k	16.9 k
Executable size:	22.4 k	31.2 k
Compile+link time:	17 s	71 s

For medium-sized programs the OSS's size advantage disappears, and for large ones (above 100k) Prospero should do a better job--this is at least my

PASCAL UPDATE (Continued)

estimate. The time ratio for a 100k program is approximately 1:2.5 (instead of 1:4), which, in my case, makes the difference between a trip to the refrigerator and doing the dishes.

The difference in speed is not a decisive factor: do it right in the first place, and only then worry about doing it fast. On the other hand, the compactness of the produced code may make *Personal Pascal* more suitable for writing desktop accessories (although *Megamax C* will beat it here).

Both compilers will work fine on a 512k machine with one double–sided drive (tested with a 100k+ program); in both cases setting up the system disks may need some thought and one–sided drive owners may be in for a lot of disk swapping.

If you have Version 1 of either of these compilers, the $30 (OSS) or $40 (Prospero) for the upgrade to Version 2 is very well spent money in both cases. If you are just thinking about buying a Pascal compiler, both implementations are worth consideration, and the final choice is, of course, yours.

GFA ARTIST

Graphics Distortion, Animation, 1000 Colors

Review by Bill Moes

Reshape graphics into strikingly unusual shapes. Animate these shapes and other sprites in your own film. Experiment with 1000 color hues in your pictures. All of these opportunities are offered by *GFA Artist*, a recent addition to the growing line of sophisticated paint and animation programs available for the ST.

GFA Artist's main screen for drawing is divided into two sections, the lower part offering 60 icon boxes as the main menu. This lower menu uses the ST's medium resolution, although all drawing is in the low resolution shown on the rest of the screen. Making menu selections is a little different. You'll hold down the left mouse button as you slide around the menu screen. The menu items will inverse colors as you slide across them. To actually select an item, click on the right

....the usual, the unusual, the amazing, all done in a menu with 60 boxes....

button. Options for some of the items, including the selection of color or size, are accessed by pressing <HELP> while the menu item is darkened but before it's actually selected.

When you select an item, the menu screen will disappear, leaving you with the full low resolution work screen. Depending on the item selected, you may unexpectedly find yourself dumped back on the menu screen after you've drawn something. After drawing one box, for example, you'll be back on the menu. A click will be needed to return to the work screen again after each box. Most of the other drawing items work the same way. This seems an unfortunate design choice. *GFA Artist* offers up to four work screens. You'll set the actual number when you set the start-up configuration, which is saved to disk. In addition to the number of work screens, the easily set configuration also allows you to have some screens or files loaded upon start-up.

Distortion and Drawing

The 60 menu boxes offer the usual, the unusual, and the amazing. The more interesting distortion effects include changing an easily marked graphics block into one with a vertical or horizontal 3D effect and bending an image into a parallelogram (V or H). It's also possible to reshape your graphics block into a globe-like image. Feel like you're on a roll? Then you'll want to distort that image into a drum (V or H). Or you can transform your marked graphics into any polygon-like shape. And you can use a bend effect on your image (H or V), with either a 1/2, 1, 2, or custom sinus amplitude curve.

After you select one of these effects and mark the original work-screen block with a rectangular outline, you'll be placed on a separate screen. This screen shows a wire-frame outline. Roll the mouse to manipulate this outline until it has achieved the desired shape and click. The original screen image will be redrawn to match the new form. You can then use any of these distorted images as a brush. There's also a lasso to quickly grab any screen portion and use it directly as a brush.

GFA Artist also has the more common paint features, including: pencil; eraser; spray (2 sizes, solid or with a fill pattern); line (with styles and widths); color replace; brush, smear, and fonts (several sizes each); magnify (4X or 8X); polygon, ellipse, rectangle, circle, and rounded rectangle (each either filled or outline); flip (H, V, or combined); arc (definable); rotate by degrees; and color cycling (Neo or 1000 color version). The fills are standard ST mono-color or custom multi-color.

....1000 colors, they're all there, count them, if you will ....

1000 Colors

A 1000-color mode is possible for static screens. (The documentation claims 1021 colors; feel free to count them.) First, you'll create your artwork on the screen. Then turn on the 1000-color mode with a click. Next, you'll choose one of the original screen colors to change and set the start and end hues (magenta to pink, for example). Finally, mark a horizontal section of the screen and click. The original color found in that section will be recolored with the intermediate shades between the two selected colors.

Careful Planning

This can quickly create appealing scenes and is of obvious use with landscapes, although careful planning is essential. While you can save and load them, the package offers no slide-show pro-

gram for these 1000-color screens and they are not usable with any animations from the package. I don't really see this feature as being of much use unless, perhaps, you're planning to tape them with a VCR.

Animation

GFA Artist also has interesting animation effects for a selected graphics block. These, some of the 60 icon boxes on the main menu screen, include: animated zoom; vertical or hori-zontal roll; rotate; horizontal or vertical 3D effects; and animated drums (H or V).

When you select one of these animation effects, a small dialog box will ask how many sprites you wish to define. Usually 5-15 will be sufficient, although larger images may require more for smoother animation. After you've set the number of sprites, you'll mark the work screen image to be distorted by animation, enclosing it in a rectangular frame. Then you'll go to a separate screen, similar to the screen used in the still image distortions mentioned above. This time you'll manipulate both the beginning and ending shape of that image, easily and quickly done. This can include changes in both perspective and size from the first to the last frame. After this, *GFA Artist* will draw the intermediate sprite images and you'll then see the shape animated. A bit of practice will sometimes be necessary to achieve the desired result.

> ....a bit of practice may be necessary to achieve desired results....

After you've developed the animated sprites, you'll go to the sprite and animation menu screen by pressing F1. (Return to the main drawing menu by pressing F2.) You'll first need to formally define the actual sprite frames. This may or may not include all of the frames drawn when first creating the animated sprites. These sprites will be animated over a number of film frames you set. Several sprites may be grouped, saving memory and creating faster animations. Then these sprite frames or groups are assembled into sequences. In creating sequences, you're able to copy, move, and swap frames within your longer animation film. The sprites can be layered so some will pass in back or in front of others. Up to 256 layers are possible. Backgrounds, up to four, can be included in your film.

Other Notes

GFA Artist permits you to save and load individual screens in *Neo*, *Degas* (all 3 resolutions), *Art Director*, *Colorstar*, and the 1000-color GFA Artist formats. It's also possible to save/load sprite files, individual fonts, complete films, and custom fill patterns.

The ST"s two-disk package requires 1 MB RAM and a color monitor. Two fonts are included along with a font editor. A player program is provided, allowing you to freely distribute your animations. The animations on a one-meg ST can include up to 2000 frames. A 1500 frame demo is included on the disks, running just over 3 1/2 minutes.

There are no keyboard alternatives to the mouse and the non-standard use of menus is not always smooth and may take some time to use comfor-tably. An example: if you decide to draw several lines each with a different color, you'll need to go to another menu item, such as the pencil, every time you change colors. Then you'll need to return to the line menu and click for the drawing screen. Options on the line menu allow you to change style and width, but not color.

The pencil option allows you to change color. The documentation is poor. The software is explained in glossary format. While this is probably sufficient for drawing features, it is far less than acceptable for the animations. You'll need to spend some time searching through the 98-page text to find the specifics on creating and assembling animations. The information on animations is not clearly presented. There is nothing at all worthy of being called a tutorial, a serious omission in any animation program.

You'll need to cold-start the program, as it doesn't clear out the ST's memory and *GFA Artist* needs all the memory it can get on a 1 MB machine. It's not possible to return to the ST's desktop without rebooting. The documentation claims this is because many system parameters are changed by *GFA Artist*. With both medium and low resolution images on one screen, along with some of the other program features, this seems valid reasoning.

> ...GFA needs all the memory it can get on a one meg machine...

I had some program crashes so, when dealing with something this complex, it's prudent to do the periodic saves we too often forget. *GFA Artist* was written by Dirk Van Assche and Danny Van Agtmael using GFA BASIC and machine language subroutines.

Summary

The strengths of *GFA Artist* ($79.95) include the varied, flexible, and unusual distortion effects possible on images along with the opportunity to create animations of some length. The menu structure and lack of animation tutorials, however, may hinder some from quickly realizing the program's full potential.

[MichTron, 576 S. Telegraph, Pontiac, MI 48053 (313) 334-5700].

FONTZ!

A GEM Font Converter/ Creator from Neocept

Review by Milt Creighton

Fontz! sounds like such a neat idea. "Want to use a Macintosh font in your word processor? No problem, just pull out *Fontz!* and convert it for use on the ST", runs the advertising. In fact, to my mind it sounded just a little too good to be true. I have come to expect ST software (and most other computer software in general) to fail to live up to my predetermined expectations. I guess it has something to do with the friction generated between undisciplined imagination and the real world. *Fontz!* is a good example of this principle at work, though for no fault of its own.

Fontz! is a utility program designed to provide an endless supply of GEM fonts for use with GDOS programs. Now aside from the question of what you are going to do with an endless number of fonts, this program has quite a bit to recommend it. With *Fontz!* you can convert Macintosh fonts (as advertised), Amiga fonts, Hippo fonts (an inside joke, I guess), DEGAS fonts, or GEM fonts from other GDOS programs for use with such applications as *EasyDraw, Microsoft Write, Fleetstreet Publisher, Calligrapher,* the new Timeworks desktop *Publisher,* or the forthcoming *Wordup* from Neocept. For example, in one of my experiments I converted a very beautiful Old English font from *Fleetstreet Publisher* for use in Timeworks *Publisher* and then used it in a document created with the latter.

Faint of Heart Beware

I offer this one example of success for those of you who may have already tried to use this program and failed utterly to make it work. Sort of a word of encouragement, you see. *Fontz!* is not for the faint of heart, for in taking up this gauntlet you will find yourself thrust into the arena to face the dreaded GDOS–monster. A word of caution, don't expect to be successful with *Fontz!* without reading the manual. In fact, the package should come with a "hacker beware" warning label. Cheating on this one will likely get you nothing but frustration.

In a nutshell *Fontz!* will accept all of the different font formats listed above and convert them into GDOS format. You can create high, medium, or low resolution screen fonts. You can also create printer fonts of various resolutions (depending on what printer driver you have installed on the *Fontz!* disk and listed in the ASSIGN.SYS file). You can scale from one font size to another. For example, you can load in a 12–point printer font and use it to create a 14–point screen font, smoothing where you need to with the program's graphic editing tools and positioning the characters within the cell. The graphic tools are actually powerful enough to create entirely new fonts. With the graphic tools you can load in a sample font and use it as the starting basis for designing a new font.

The manual is approximately ninety 8.5" x 5" pages, most of it crammed with useful information. I found it somewhat disconcerting to read in the introduction that the author expected me to have difficulty with the program. In fact he requests that you read to the end of the manual, even if you come to parts you don't understand. My advice to you is to respect his request.

The Evil GDOS

Fontz! is not a program for the neophyte user. Very experienced hackers and programmers (sometimes the same thing) will have no trouble (provided they read the manual) but the rest of us will have to work to get there. This is not the fault of Mike Fulton (the author); the manual is quite well written within the bounds of what he was attempting to accomplish. The difficulty lies in explaining the ramifications of the relationship of *Fontz!* to GDOS.

In other similar operating systems (such as the one found in the Macintosh) the relationships between multiple fonts and output devices are transparent or nearly transparent to the user. This is because the native Macintosh drivers only recognize the Apple Imagewriter or Laserwriter printers. Atari GDOS, however, can be modified by any experienced user to accept any number of output devices for which a GDOS driver is available. But the added flexibility only comes at the cost of added complexity.

As a result, the impact of *Fontz!* on your computer will depend in large measure on your willingness to get into the complexities of installing the fonts you convert/ create into the applications programs you use. Some, like *Easy–Draw*, are relatively straight forward but others, like Timeworks Desktop *Publisher,* are more like pulling teeth.

Fontz! is, of course, GEM–based and the menu bar that greets you has a number of selections. You immediately have some idea of the function of most, but there are a few which are not intuitively obvious. I do not

intend to summarize the function of each of the commands here: to do so would only encourage some of you not to read the manual and surely lead a few down the primrose path to total confusion. Instead, I would like to offer a few hints which might make the manual easier to understand.

First, if you are going to scale a font to a printer other than the Epson FX–80 (or compatible) you have to install the proper GDOS printer driver on the *Fontz!* disk. That means using the included Atari Install program (shudder) or doing it yourself. I will talk you through the latter, but you're on your own with the former.

Say you want to use *Fontz!* to convert fonts for use with your Epson LQ800 printer. First, you have to have an LQ800 driver. The only GDOS driver supplied with *Fontz!* is for the Epson FX–80. Assuming you have one, you must copy the driver to your GDOS.SYS folder and then type in the name of the driver (with a text editor or word processor–saving it in ASCII format) as device 21 in your ASSIGN.SYS file. This will permit you to create fonts with the proper resolution for the LQ800 (180x180 dots–per–inch) as opposed to the 120x144 dpi of the FX–80. *Fontz!* is also capable of resolutions of 160x72 (SMM804), 300x300 (laser printers), and 360x360 (NEC P6/P7) as well as all the screen fonts and Meta files. Now when you go to the Global menu and set the font device, your LQ800 will show up as an option.

Keep the same I.D. number for each separate font. All Old English character sizes should bear the same I.D. number, for example. Remember that font files can bear any legal GEM name. ATCM18SP.FNT could just as easily be named CAMELOT18.FNT as long as you have some way to tell the screen and printer fonts apart. Also keep in mind the possibility of using *Fontz!* to scale up new GEM font sizes rather than have your application program do it for you. You'll get better results since you can use some of the smoothing tools in the graphics editor to make them look nice. Don't spend too much time making the screen fonts look nice––it's the printer fonts you want to slave over.

There are also some practical difficulties you should consider in obtaining new fonts. Macintosh fonts are readily available; there are plenty in the *Current Notes* public domain library, for example, but they are on Magic–format disks and you will have to transfer them to ST–format disks before you can access them. Chances are you'll need the Magic Sac for that. You can get fonts from local Macintosh bulletin boards or even from GEnie, but you'll probably have to decompress them with a Macintosh program. Again you'll need the Magic Sac. Maybe someone could convince the *Current Notes* publisher to offer his Macintosh font disks in ST format.

That brings up importing Amiga fonts which pose even more difficult problems. They are available and there are even some which you can find on commercial bulletin boards which are compressed using ARC. Those you can de–ARC on the ST. But most of the more recent files I have found use another compression utility which has no counterpart (that I know of) on the ST. That means you'll have to get someone with an Amiga to decompress the files and send them to you via modem. It is possible...but hardly easy.

The Bottom Line

Fontz! does what it is advertised to do and more, but unfortunately that will prove little solace to some users who purchase it and find themselves unable to operate it or unwilling to make the requisite learning investment. This is not a problem caused by *Fontz!*. It is caused by the complexity of GDOS and the lack of a set of universal standards in programs which implement GDOS. This is unfortunate because *Fontz!* is just what we need for the new desktop publishing programs and word processers now appearing. I do recommend *Fontz!* if you are an experienced user. If you are not, buy it for a friend who is and in return have him design that font you want. You'll both benefit.

A DUO FOR DISK JOCKEYS

The Universal Item Selector and SuperDirectory

Review by John Barnes

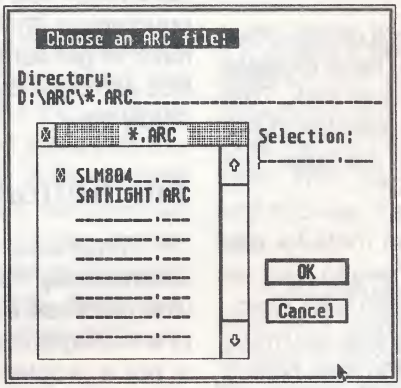
Some of the woes that I detailed in "The Complete Packrat" back in November of '87 have been addressed by two new additions to my software collection. The *Universal(tm) Item Selector* from Application and Design Software and *SuperDirectory* from Michtron are "must have" utility programs for everyone who uses a hard disk.

Universal Item Selector

The File Selector Box is a feature of a great many Atari ST programs. If we click on one of the functions in the "File Menu" of a typical application program we get a screen like the one in Figure 1a. Installing the *Universal Item Selector* on our systems changes the screen to the one in Figure 1b. "What's the big deal?", you say. Well, the extra buttons labelled "Copy", "Move", "Rename", "Delete", "Format", and "Folder" allow you to perform many vital file maintenance functions in addition to simply loading or saving a file.

The "Format" function, for example, allows you to format a fresh disk in case you ran out of space while trying to save the Great American Novel. Need a new folder? No sweat, just click on Folder and name a new one. You installed your printer driver in the wrong folder? Just bring it up in the window with the file names and Move it to the right place. The list of possibilities goes on and on.

The Rename function allows you to change the name of a file or a folder. Actually it creates a new folder, Moves all of the files to it, and it deletes the old folder. I used to do this using *DO_IT!* batch files. Move and Copy preserve the original date on the file. HOORAY!



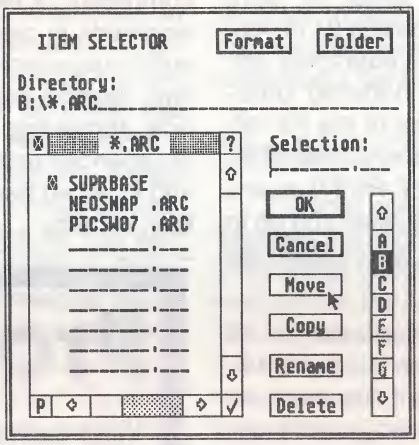


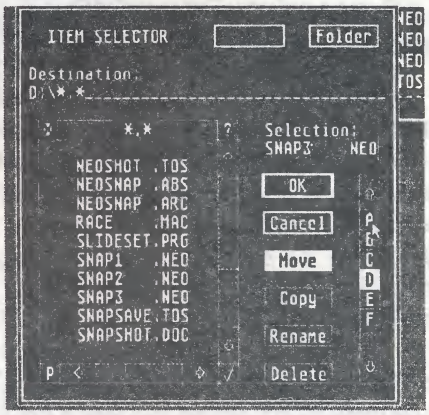
Figure 1a (Top) - Standard File Selector Box
Figure 1b(Bottom) - Universal File Selector Box. Note extra Function buttons and drive selectors.

The Move function takes a file, copies it to its destination folder (or drive) and erases it in the old location. Very nice, but it might be wise to back up the original disk until you trust the software. Figure 2 shows the steps for a Move. First, select the file to be Moved (Fig 2a), then select the destination, then click on OK, and the file will eventually appear in the destination file name window (Fig 2b).

Wildcards are fully supported in the Copy, Move, and Delete functions. Selective searching is also possible by manipulating the contents of the Directory name line.

The little "?" button in the upper right hand corner of the filename window gives a status report on the drive or folder. The slider bar on the bottom of the filename window controls horizontal scrolling so that you can see the date and size of your file. The little "P" button on the lower left sends adirectory to the printer. It is rare to see so many functions packed into a small space so efficiently.

As mentioned previously, this file selector dialog box is available from any application that uses the standard file selector built into GEM-DOS. A program in your AUTO folder lets the *Universal Item Selector* in-



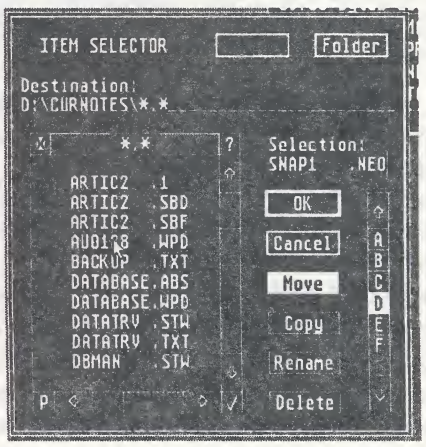


Figure 2a (Top) - Move Function, Step 1
Figure 2b (Bottom) - Move Function, Step 2

sert itself in place of the original. "But," you say, "my applications all use their own file selectors". Weep not, the Application & Design people have provided a handy desk accessory that will call up the Universal Item Selector any time you can get to an accessory.

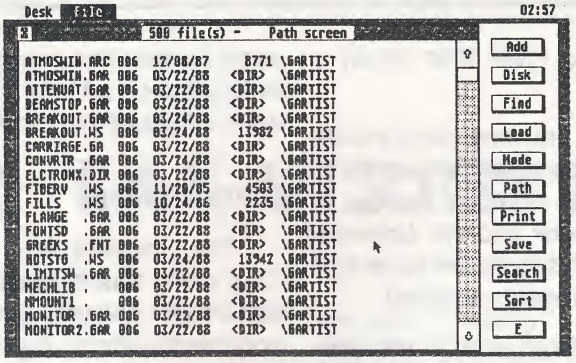


Figure 3 – SuperDirectory database viewing screen. Database functions are selected using the buttons on the right.

The whole kit is very well thought out and it fills a genuine need. It would have been nice if this could have been done right the first time around, but I can't see any reason why Atari can't buy these folks out and incorporate the package right into the TOS roms.

Now that there is a good item selector other developers should stop struggling with their own funky versions and concentrate on making the rest of their code work right. QMI, for example, could probably replace the Disk Utilities part of their DeskCart product with the *Universal Item Selector* accessory and save some precious code. This might also prevent DeskCart from corrupting path names in other applications, as it is known to do from time to time.

I've saved the best news for last: *Universal Item Selector*'s list price of $15.95 is incredibly CHEAP.

The only "wish list" item that I can think of offhand is a "Lock" button to toggle the read/write status of files. If there are bugs in the *Universal Item Selector* they could do a LOT of damage. I have experienced bugs, but I have not been able to pin them down. I am, therefore, more careful about keeping my disks backed up.

SuperDirectory

After using *Universal Item Selector* to tidy up parts of my string collection I went looking for a good way to keep track of it. *SuperDirectory* from Michtron is a darn good tool for this. Super Directory allows you to build, maintain, and report on a database containing all of your file information. It does this quickly and efficiently.

Super Directory's menu bar has two entries: Files and Desk. The Files menu provides access to the database function, whose basic window looks like Figure 3 once the user has loaded in the selected database. The database is entirely RAM resident and the vertical slider bar for choosing the portion to be viewed works with blinding speed. Additional information about the files can be viewed by switching the MODE.

The ADD function causes all of the directory data for all of the paths on the selected disk drive to be merged with the data already in the database. You must supply a disk number for separating the contents of various disks. You must also remember this number for future reference. It takes only a few minutes to archive an impressive number of disks.

The FIND function brings up a dialog box that lets you define a query filter for the window contents. The search masks in the FIND function support wildcarding nicely. A SAVE performed while the query filter is active allows you to construct a database containing the desired subset of all records. The PRINT function spews records out to the printer.

The SORT capabilities, illustrated in figure 4, are quite nice and the sort is very fast.

An editing function is available for annotating individual file entries.

The lists that this program produces are quite handy. They are a quick way to find a particular file in a large disk collection. They are also useful as reference while backing up disk files and purging aging white elephants.

There is no requirement for a hard disk to run this system, but the database files can get quite large. At around 90 bytes per file a 360 K disk might hold a database of 3000 records or so. I have CADD disks that have 3–400 files on them. In such situations it is better to make a bunch of small databases rather than one huge one. The LOAD function allows the user to merge several databases should this need arise.

Based on the midterm exam the product gets a B– rather than an A because it lacks some desirable features. First among these is the ability to "Save as Text" or "Print to Disk". If it had this capability I could use *Super Directory* as the front end for capturing file names to be input to a more powerful database program, a spreadsheet, or a text editor. This would be a tremendous documentation aid. I used to use the *PdContents* program for this, but it now

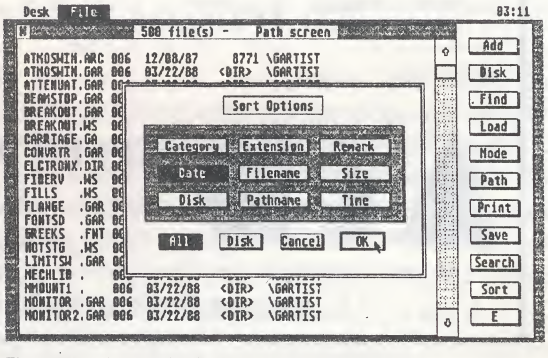


Figure 4 – Sort selections for SuperDirectory.

chokes up on any disk that has more than about a hundred or so files on it.

In order to get to the menu bar you must close the file window. I find this very annoying because I would like to use various desk accessories while I can see the files in this window. The *Deskcart* Notebook and the *Universal Item Selector* are two examples. This looks like a piece of sloppy programming that could be easily corrected.

The editing function, which allows you to annotate your file entries, should support wildcarding. It is unbelievably tedious to enter data which actually applies to a whole bunch of files. The "Category" item is one example.

I recently experienced a shocking bug: after building a list of some 1202 files from the four partitions of my hard disk *Super Directory* told me that I could not SAVE the resulting file. It also clobbered the old copy of the file and, after aborting back to the desktop my system thought it lacked enough memory to do anything. This is a BAD bug. Will Michtron fix it? We'll let you know. They seem to think that program's only problem is an inability to function on a Mega ST (Super Directory goes berserk when it finds all that memory).

Conclusion

The Universal Item Selector is so handy that Atari Corp really should make it truly "universal". Application and Design software gets a B+ for this product. I would upgrade them to an A+ if they could remove any lingering doubts about bugs. Michtron gets an Incomplete for *SuperDirectory*. But the present version will help a lot until something better comes along. I would encourage every Atari disk jockey to get hold of the Universal Item Selector. Get *Super Directory* as well if you are really in need of a directory program right now.

[Universal Item Selector : Applications & Design Software, 226 NW F Street, Grants Pass, OR 97526, $15.95. (503) 476-0071. SuperDirectory:Michtron,576 S. Telegraph, Pontiac, MI 48053 (313)334-5700,$39.95]

RELAX AND ENJOY

By Joe Kuffner, (c) 1988

AFTER-TAX STRESS RELIEF

It's over. For the past 72 hours my heart rate hasn't fallen below 120. My neck, longing for the firm, but gentle masseuse's touch, aches and sends messages of disrespect to my now exasperated brain. What, pray tell, causes this anxiety and butterfly-filled stomach as the ides of April approaches--and passes? Nothing short of Forms 1040 and 760. But now that it's over, what can I do to get back into that routine of pleasurable, relaxing bliss? Well, let's start by redefining ARCADE ACTION. I'll then follow through with a casino favorite for my PD-of-the-Month. Aside from a little lost sleep, these two games will have you back on your seat(!) in no time.

BUBBLE BOBBLE

Few games catch hold of me and won't let go. This time it's an innocent, cutesy, calmly-paced, arcade game entitled *BUBBLE BOBBLE* that has me staying up nights wriggling with pleasure. Published by Firebird, it captures the real excitement of arcade games maintaining simplicity, action, colorful animation and a cheery tune. Although I've not seen this game at the arcade, Firebird lists a TAITO copyright as well as their own on the title page to *BUBBLE BOBBLE*.

In this one or two player, joystick action game, you find yourself in a world of cute cave monsters that want to destroy you. You, and your comrade in the two player mode, are a miniature, friendly-looking dinosaur. For your defense, you have the ability to blow soap bubbles in which the enemy will become entrapped, if your timing and accuracy is right. You must then run to the bubble and pop it on the sharp, bone plates protruding from your backbone (a la stegosaur or dragon). Breaking all the bubbles puts you into another, more difficult cave, and still another, and so on. The quality of animation, particularly with the movement of your character, and the colorful, low resolution graphics must be seen to be appreciated.

If I had to give a general description of the game, I would say that *BUBBLE BOBBLE* is a cross between three arcade classics with a dash of several others. The cutesy dragon character that you play, moves and acts similarly to the penguin in *PENGO*, although rather than pushing tiles, you find yourself blowing bubbles (and popping them). I'm reminded of *MARIO BROS.* each time that I jump to pop the moving targets while avoiding dreaded "enemy" characters (icemen, snapping "whale" balloons and countless others) because of the jumping, climbing and aiming required in so doing. Also at your disposal are a number of bonus objects that can cause you to do anything from being transported to higher levels or to turning your bubble blowing power into fireball throwing. These dynamic changes to your powers remind me of the transformations that take place in *ARKANOID* while on the fly.

Some of the objects are for points and others for features. A fun (and strategically important) object to pick up is a sneaker which doubles your jumping speed. Still another clears the screen and thrusts you into bonus point action. There is a significant amount of "thinking on your feet" required in order to avoid being stunned (and losing one of your lives) and deciding when to go for a prop and when to defend against the relentless pursuit of cave monsters. Additional lives are awarded on the basis of points.

The object of the game, as with most arcade games, is to score the most points. To score the most, however, not only requires the agility and maneuverability of much more than a dinosaur, but more brain power too. I found the 100,000 point bonus rounds to be the most lucrative. Grab that vial quickly. A second high scoring maneuver is to have several bubbles "active" when you pop a trapped enemy. As you play on, other methods will become more apparent on how to achieve high scores. I've heard rumors of players in the 300k's of points, but I've only attained 194,980 (level 15).

I'm convinced that this program fits into the "must have" category. Maybe you can use some of that tax refund you've just calculated.

PD OF THE MONTH

While at the casino, few players can resist the opportunity of gambling while still carrying on a delightful, relaxing conversation with their mate and friends. Of course, there's only one game where concentration isn't an essential part of the wagering process. I'm referring to *KENO*, Glenn Ulrich, using compiled *GFA BASIC* has successfully transformed your computer into the parlour in which this game of luck is played.

In this mathematically accurate version of the game,

RELAX (Continued)

In this mathematically accurate version of the game, Glenn has combined elements of humour, bitter reality and excellent documentation and history to bring a solid entertainment package to your computer room. In addition, he has provided an educational tool for interested gamblers to test their statistical prowess while having fun. Although the graphics and sound are stark, I think you'll be as impressed with KENO as I found myself. I'm certain that we'll see later versions of the program which will include enhanced features and more efficient programming. (Presently, the game requires a double-sided disk due to the over 600K required for storage.) An immense effort that I'm sure will motivate other PD authors and users alike.

That's all for this month. If you found yourself spending too much time working on taxes these past couple of months, I highly recommend you spend the next couple of months relaxing and enjoying life, and then start on next year's taxes!

GONE FISH'N

A Bass Fishing Simulation

Reviewed by John Lopez

The whisper as the line trails out behind the lure, the plop, and the soft grinding sound as reel and line pull in the darting metal figure. A shadow? Whack! You set the hook and the fight begins.

Gone Fish'n by Interstel Corporation of Webster, Texas, is a unique new game by Roger Damon. It is subtitled, "A Bass Fishing Simulation", and it delivers on that implied promise. To truly get into this game, it helps to like fishing. A little bit of patience is required for the non-fisherman to become acclimated, but once hooked you will find each session gains in fascination at each new level. On a very superficial level

> ....the more experience, the more you enjoy fishing, the more the fascination.....

this is an action simulation with adequate graphics and what appears to be a lot of detail to assimilate before any success at catching fish is forth-coming.

If however, you are already a fisherman of some pretension, then this is the computer game for you. Mr. Damon really knows his bass and the more experience you have and the more you enjoy fishing, the more this simulation will tend to facinate you.

The game is not copy protected but is copyright protected. The first requirement each time you boot up is to apply for your fishing license. This is done by entering the appropriate word from the manual line and page cited on the first screen.

Select Gear

You are then led into the game itself which, like so many actual fishing trips, begins at the kitchen table. Options include: checking the week's weather, reviewing the fishing log book for catches already recorded, consulting the map and telephoning the various lakes for up to date fishing reports. If you have budgeted sufficient funds for the trip, off you go. Before heading for the lake, a visit to the tackle shop is in order. There, a selection of gear can be chosen from a wide variety of lures and gadgets including depth finders and a fully equipped bass boat. The only way to afford this level of luxury is to enter and win big money in bass tournaments. The otherwise very comprehensive instruction book becomes a bit obscure on this point, or more likely this reviewer was a bit obtuse. In any event a phone call to the kind and helpful folks at Interstel set me straight.

Big $$$

Entering a tournament requires a $500 entry fee and you begin the game with $200 cash and have between $200 and $270 per week to spend on fishing. The question: how to raise the cash? The answer is to fish as cheaply as possible, one day per week. At this rate by the fifth week or so, you should have husbanded the requisite entry fee and can go after the big prize money. Thus, there are two basic levels on which one may play the game. The more complex tournament level requires a significant commitment of time and skill to master the absolutely authentic diversity of successful bass fishing in a variety of environments with a range of equipment under changing conditions. Even the most basic level of *Gone Fish'n* requires some serious study of the instruction manual or significant experience with a rod and reel to achieve any measure of success. In its drive for realism, this game even builds in the rhythms of fishing--moments of intense excitement separated by periods of patient waiting--sometimes long periods.

The game is mouse actuated. At first blush it would appear that a joy stick would make a better analog for a rod and reel, but in short order one becomes quite proficient at imagining a line in the water and a rod tip controlled by the movement of the mouse alone. Perhaps the best feature of the otherwise not particularly inspired graphics is the little window that appears in the bottom right-hand corner of the screen following a cast. This window provides a representation of the lure after the cast, either floating in place or sinking toward the bottom. Every movement imparted to the lure (and each lure allows a variety of techniques to be employed) is also mimicked in the window.

A Strike!

When a shadow representation of a fish appears it is normally as quick and surprising in its movements as the real thing. The strike (a click of the right mouse button) must be perfectly timed or the fish is lost. Once the hook is set, the underwater window disappears and the fisherman must respond appropriately to the fighting fish, always keeping the rod tip up or risking the loss of a big one. For verisimilitude, large fish are far more difficult to land than small fry. More realism is added by the ratio of small to large fish, the variety of environments and the steady elapse of time as the fishing day is expended searching out the right spot or fishing at ten minutes per cast.

The genius of this game really becomes apparent as the player enters tournaments and obtains sufficient funds to allow the purchase of a depth finder and a fast bass boat. Thus equipped he is able to discover the underwater structure that provides the best opportunity for catching a very large fish. It is solving this problem of properly presenting the right lure in the right environment that duplicates the best of real bass fishing. A beginner quickly learns valuable lessons that will stand him in good stead on the actual lake. The more expert fisherman will be fascinated by the wide range of variables available to him and will inevitably improve his reading of a body of water whether on the surface or via a depthfinder's screen.

In short, Roger Damon has provided us with an enjoyable pastime for the cold months when fishermen fondle their tackle and dream of hooking the big one. In the same package he tests and sharpens the fishing skills of both beginner and expert in a bass fishing simulation that apart from its graphics, stands alone above the competition.

SANTA PARAVIA AND FIUMACCIO

A Laid Back Adventure Game

Review by Don Elmore

Any fellow "geriatrics" out there? For those of you who are into digitary psychomotor retardation, has StarSoft Development Laboratories got a game for us! I enjoy the shoot-em-ups. I also get a charge out of being slimed by blue monsters in the upper levels of the dungeons. I enjoy flying various types of commercial and combat aircraft into the nearest mountain (or the ground). I also enjoy racking my brains (?) trying to figure out why the door won't open, or why the wall won't part or why everything goes dark. For about fifteen minutes. Then it is high time to turn to *Santa Paravia* and play a graphics game that does not depend on hand-eye coordination...one that involves slow, measured, steady manipulation of agriculture and economic activities.

The year is 1400 A.D. and you start out as the ruler of a "tiny, undistinguished Italian city-state." Through creative managing of land, serfs, grain production and economic development, you can progress from the "entry level" title of Sir, through Baron, Count, Marquis, Duke, Grand Duke, Prince, and finally ... King! Or, Lady, Baroness, Countess, Marquise, Duchess, Grand Duchess, Princess and Queen! You can play the game alone ... or challenge up to five other people to play with/against you. Your average period of reign is 20 years and each turn (equivalent to a year) consists of four phases; the Harvest phase, Tax & Justice phase, Display phase and Public Works phase. So, what do you do?

Grain is Everything

Well, during the Harvest phase your monitor indicates how much grain you have in reserves, how much this year's demand is (based on how many serfs you have), the price of grain (per stere!), the price of land (per hectare) and how many florins you have in your national treasury. Decision time! Before releasing grain to feed your population, you may either buy additional grain, or sell what you deem to be surplus. You can likewise either buy or sell, land.

After playing the game a few times, it becomes evident that how you manage your grain reserves impacts directly on your serf population. Release more than the minimum number of steres required and more serfs are born than die, and merchants immigrate to your city-state to take advantage of the surplus. Release less than the required number of steres and a proportional number of serfs will starve during the year.

Duties & Taxes

The next phase is the Tax & Justice phase, where you control tax rates and the level of justice in Santa Paravia. In the tax arena, you can adjust the levels of customs duties, income taxes and sales taxes. Also, you can select from four levels of justice, ranging from very fair, to fair, harsh and outrageous. If you should decide to gradually change over from an agriculture based economy to a mercantile one, the tax rates also impact directly on your population. Also, you quickly learn that benignly offering outrageous justice will result in your serfs fleeing the harsh justice. (Another way to control your population).

The third phase is the Display phase, consisting of a map of your domain, complete with a fountain and a stream running diagonally through your land. As you (hopefully) grow in wealth, and purchase palace and church parts, they are added to your map. There is an icon of a serf at the upper left-hand corner of the screen, and a soldier at the upper right-hand corner. Their positions, relative to the top of the screen, indicate whether you need additional serfs or soldiers.

Buy a Palace

The last phase, is the Public Works phase, and this is where you can use your hard earned florins to buy mills, markets or palaces or church sections. You can also outfit additional platoons of soldiers, if you feel that you need the extra protection. If you make the decision to branch out and purchase markets, merchants will be attracted to your city-state, and you will receive increased tax revenues. Mills employ serfs and also add to the tax revenues. Palaces draw nobility and churches, clerics. As your wealth increases, you progress in titles, until eventually you are proclaimed King. I have not achieved the exalted rank of King, yet...but have reached Duke twice and Grand-Duke, once.

Now, back to what one does. Well, one runs his (or her) kingdom. You can take what I call the "Eagle Scout" approach, ruling benevolently, ensuring a plentitude of grain for the peasants, gradually acquiring markets and mills, with an appropriate dash of palaces and churches. After twenty years of rule, you are informed that you have died in bed, peacefully, in the palace (after hav-

ing reached the rank of Marquis...perhaps). Or, you can adopt a more Machiavellian strategy, appearing generous with your grain, while astutely juggling custom duties, taxes and justice .... maliciously manipulating your people .... or, you can become the ultimate tyrant! Get too greedy, and the games declares you bankrupt, obliterating all of your mills, markets, palaces and churches and leaving you with 100 florins. The start up screens also provide you with the option of playing four different levels of difficulty, from apprentice, to journeyman, to master, and finally grand master.

I find the game interesting. Relatively quiet, introspective, and interesting. I do have one major criticism, though. The game's graphics leave a lot to be desired. They don't even begin to tap the ST's impressive graphics capability! So, overall thumbs up?...or down? Well, that depends on your personal references. But at $29.95 (locally) *Santa Paravia* could certainly find a deserving place on the game shelf of even the most ardent action adventurer.

THE COMPUTER OPERATOR

by G.S. Elith, of the Australian Computer Society

Feet winging, heart singing, he trots through the door
So happy to be midst the clatter and roar.
Computer and printer, the job as a whole
Is heaven to him, provides food for his soul.

No other, his mother, his kid nor his Wife
Receives so much devotion, gives meaning to life.
To enter the center is life's greatest joy
Providing a pleasure that surely won't cloy.

Pulsating, awaiting his gentle commands
The rig seems to recognize capable hands.
Confident, competent, he flits here and there
Getting things to go on the air.

Drives counted, tapes mounted, all ready to go
He pauses a moment, his features aglow.
Serenely, routinely he pushes the start
And its just about then that things fly apart.

One tape, then another, gives out whistles
and screams
The printer goes mad, spewing paper in reams
The lights on the console give a fireworks display
And in momentary panic his feet turn to clay.

His heart begins pounding and surely must burst
As the whole crazy rig acts like something accursed.
For what seems an eternity but is only a flash
His feet bogged down in a glutinous mass.

He is unable to move and unable to speak
As the Computer goes dead with a pitiful squeak.

Head ringing, eyes stinging, he goes for the switch
Knocking down power on his beautiful witch.
Benumbed, feeling stunned, not yet able to guess
The calamitous cause of this horrible mess.

Traumatic, dramatic, the shock is profound
For fully a minute he utters no sound.
Then waking, hands shaking, his temper gives way
And the curses start flying, I'm sorry to say.

He curses the mainframe, the tape drives as well
He curses the card reader, consigns it to Hell.
He curses the printer, he curses the punch
He curses the Console, and then on a hunch
He curses the program, and still quite untiring
He curses the Diodes, Transistors and wiring.
He curses the present, he curses the future
He curses the day he first saw a computer.

At last, quite exhausted, he falls to the floor
Unable to utter one little curse more.

Bedeviled, dishevelled, his face chalky white
Eyes bloodshot, tongue lolling, a pitiful sight.
It's over, all over, the battle is done
Twixt Man and Machine, the Computer has won.

Muttering, stuttering, completely insane
He mumbles this warning again and again.
Idiots, Idiots, can't anyone see
That anytime now you may end up like me!

CURRENT NOTES ST LIBRARY

New Disks for March

#219: DBMAN DEMO DISK. Demo version of the latest release (Ver 4.0) of dBMAN. Databases limited to a maximum of 20 records.

#218D: PLAY IT. (DS) Programs to input a sound file from ST Replay and output a file that can be played with either of the two player programs provided. Disk includes a collection of ready to play SND files. Here your ST Talk!

#217: MUSIC STUDIO NO. 6. Another 70+ songs for use with Music Studio. Includes PD player to create your own music albums. Works MIDI (C)

#216: MUSIC STUDIO NO. 5. Over 70 new songs for use with Music Studio. PD player to create your own music albums. MIDI (C).

#215D: A.I.M., Ver 2.3 (DS). Atari Image Management System (color or mono). Sophisticated image manipulation program from Germany that lets you perform math on images (can read in NEO and DEGAS pics).

#214: SPECTRUM 512 MOVIE ANIMATION. Imitation of Amiga demo that shows 4 monitor screens at the same time each with a different animated display.

#213: MONO GAME DISK NO. 5. Adventure writing system; Daleks – graphic strategy game; Krabat2 – play chess against the computer; Stocks and Bonds; Eliminator – interesting variation of card game; breakout.acc and reversi.acc.

#212: MONO GAME DISK NO. 4. Spacewar – battle Klingon cruiser; Megaroids – Asteroids clone, Runner (great arcade game!), Squixx (like QIX).

#211: GAME DISK NO. 13 For Younger Kids: 2 music prgs (Kidmusic and Kidpiano); Make your own Mr. Potatoe Head with KidPotato; and KidMixup – display pics that tell a story.

#210: GAME DISK NO. 12 2 vers of Pacman; create jigsaw puzzles from DEGAS pics; drive race car around track; drive car to top of hill in widow maker, make yourself invincible in Time Bandit.

#209: GAME DISK NO. 11. Try your hand at Las Vegas: Poker, Black Jack, Roulette, and Slots. (C).

March Updates:

#176: ST WRITER ELITE, Ver. 2.52. Latest version (3/20). Supports multiple printers. English, German, and Spanish. Complete documentation.

#194: VANTERM Version 2.3. New release (3/24) of this super terminal emulation package.

New Disks for April

#229 – EASY DRAW UTILITY DISK. Fonts: (Chicago 7,10,14,18,28,36; Courier 7,10,14,18,28,36; and Calig (7,10,14,18,28,36); Easy Draw Art (18 GEM Pics: addressbk, alphabet, asset_p1, asset–p2, assissi, box_brd, callig, clip–tmp, dailycal, disk_lbl2, hi_tech, line_brd, pd_art_1, pd_art_2, rocky, scrolbrd, swiss, vhs_lbl)

#228 – SUPERCHARGED EASY DRAW SLIDE DEMO (monochrome). A self–running demo of the capabilities provided by Migraph's new Super Charged Easy Draw.

#227 – CASTING D'ENTERPRISES by Pro–pulse. An impressive demo of the animation and graphics capabilities of the ST. This French "film" runs for about 7 1/2 minutes.

#226 – FRACTAL ZOOM VERSION 6.A. This unique program lets you create a variety of fractals both at full screen resolution as well as in a smaller "preview" box. Animation options lets you turn your fractals into a zooming movie. (color)

#225 – BREACH & EMPIRE. 14 additional scenarios for use with BREACH. A collection of maps for EMPIRE players as well as the fixsave.prg which allows owners of older versions of EMPIRE to use the play–by–mail option.

#224 – TOY PROLOG. This language operates exactly like the system described in Programming in Prolog by Clockrin & Mellish. (Note complete docs, but they are in GERMAN!).

#223 – C SOURCE DISK NO. 7. C source programs for ARC.TTP, a C compiler, formatting disks at 11 sectors/track, disk formatting program, code for accessing TNY file formats, and a cross assembler to 6809 CPU–based systems.

#222 – DESK PAK PLUS (Shareware) 10 desk accessories in a single file: clock, calendar, phone book, calculator, appuointments, free ram, note pad, copy file, delete file, desktop.

#221 – UTILITY DISK NO. 22: ARCSHELL Version 1.8; ARC Accessory; DCFORMAT acc.; DISKFREE (speeds up – 10 fold – GEMDOS dis–kfree() function); FOLDRXXX (takes care of 40 folder limit in TOS); FSELV55 (replacement for GEM file selector box); SUPER BOOT 3.2 (all–in–one type boot program).

#220 – UTILITY DISK NO. 21: YOUR 1ST UTILITY DISK. Micro–Time Alarm Clock, ST Ramdisk and Printer Buffer, Clock/Calendar, ASCII Printout, DeARChiver, Disk Manager, Disk Directory Listing Program, and Accessory Selector and Resolution Setter.

New Disks for May

#239: CLIP ART NO. 5: Holidays and Headers. 28 screens full of excellent clip art. Disk includes PICSW7 and DSLIDE. For color or monochrome.

#238: PUBLISHING PARTNER UTILITY NO. 2. New PP fonts (CYRILLIC, HELVETIC, HUDSON, and SATURN). Printer Drivers (HPD, HPF, LQ1000F, NECP7D, NECP7F, and PS_PLUS). Font Editor (w/ docs) for creating your own PP fonts.

#237: MUSIC STUDIO SONGS NO. 7. 35 more Music Studio songs. Disk includes 2 PD song players and a program to convert the 8-bit Advanced Music System (AMS) songs to Music Studio formats.

#236: PLAYIT DEMO NO. 2. More digitized sounds for your ST: ADAM12, DRAGNET, MR_ED, SUBETHER, and SYNCLOCK.

#235: CYBER DEMO DISK. (Four animations: CAMFILM, PSLOGO, RAISINS, and SAUCERB, with ANIMATE3.PRG)

#234: UTILITY DISK NO. 23. DSKSCAN1--ST Floppy Disk Manager V1.0/2.0, by Todd Burkey. DSLIDE2--Deluxe Slideshow V2.0, shows all popular ST picture file formats. HDOPTIMZ--Atari ST File System Checker and Repairer, V1.1 and File System Compacter, by Barry Locklear. MEMFILE--MemFile V1.3, a desk ACC to view and edit any portion of ST's memory, a file on any disk drive, or the individual sectors of any drive. PENICILN – virus killer program. SDDFR12--Super Directory Data File Reader.

#233: SHEET. This is a shareware spreadsheet program by Mr. Chor-ming Lung. Complete docs included on disk.

#232: MODULA-2 SOURCE DISK NO.4. GEM-MODUL--a very useful and large assortment of modules that ease the use of GEM functions. MATH-TRAP--a collection of modules for adding more math functions. THEACC--an ACC that gives 2 formatting formats, numerous copying options and disk DOS type commands all in one ACC.

#231: C SOURCE DISK No. 8. Another collection of C source code. HACKSORC--source to the game HACK. PENICILN--contains the source code to an ACC to help protect against computer virus' as well as the ACC itself.

#230: MONO GAME DISK NO. 5. CRIBBAGE--play the computer in a game of Cribbage; DRAW-POKR--A very well-done game of draw poker. Also runs in color. MEGAMA11--Mega Maze 1.1 requires a joystick and is an adventure maze of sorts. Also runs in color.

NOTE: All *Current Notes* disks are either public domain, copyrighted but distributed freely to the public (e.g. ST Writer and Neochrome), or shareware products. All disks are pretty much full and programs should all run. In mass copying disks, it is not always possible to detect if a disk copy is bad. If you ever have a problem with a CN disk, therefore, just return it for a free replacement. For a complete listing of the CN library, send a SASE to CN Library, 122 N. Johnson Rd, Sterling VA 22170.

Disks are $4.00 each (ST, Magic, or PC library). Add $1.00 for every 6 disks or fraction thereof for shipping and handling. Foreign orders add $2/(6 disks). Virginia residents add 4.5% sales tax. Discounts are available for quantity orders:

1–9 disks Each	$4.00	40–49 disks	$3.20
10–19 disks	$3.80	50–or more	$3.00
20–29 disks	$3.60	S&H $1/(6 disks) up to a maximum of $6.00.	
30–39 disks	$3.40		

CURRENT NOTES PC LIBRARY

These disks are in IBM format for use with pc-ditto on the ST or directly with IBM or compatible PCs using 3.5" drives. Note all disks require DOUBLE-SIDED drives.

PC-01 PROCOMM, V2.3: Terminal Emulator Program (Shareware) also MINIHOST, host BBS system.

PC-02 PC-STOCK, CARDEX: PC-Stock: general purpose stock trend analysis program. CARDEX: a rotary index card file equivalent to a Rolodex.

PC-03 QEDIT: QEDIT: the Quick Editor A fast text editor, uses all available memory, allows split screens and multiple file editing.

PC-04 PC-OUTLINE, V1.05: An outlining and planning program, allows you to randomly enter any kind of info and then organize it into hierarchial structure.

PC-05 AS EASY AS: Powerful spreadsheet (1,024 rows by 256 cols) with a large set of menu command features.

PC-06 PC-DBMS, FLOW CHART: PC-DBMS: v1.2, data base programs. FLOW CHART UTILITY MORTGAGE CALCULATOR

PC-07 EASYBASE, BANKBOOK: EASY BASE: Data base for new users with medium size applications. HOME BANK BOOK: keep track of your funds in a bank-book style system.

PC-08 TIMESAVER & PFM: TIMESAVE: calendar/appointment book. PFM: Personal File Management System to help you deal with DOS

PC-09 POKER & STAR TREK: DRAW POKER, V1.0: simulates Nevada video draw poker machine. MS-TREK 1.0, Star Trek Adventure

PC-10 ZIP: ZIP: The Ultimate Utility Complete file manipulation utility. Includes ARC and de-ARC and terminal program with XMODEM transfer.

PC-11 A.D.A. PROLOG: Version 1.90 Complete Prolog language with documentation.

PC-12 FREE WORD: Version 1.0 PC Word processor with docs, demo, and reference.

PC-13 VISIBLE PASCAL: Pascal learning system, language, editor, docs. Allows simultaneous view of output and source code to help learners debug their programs.

PC-14 KIGGAMES: Alphabet, Animals, Clock Game, Hangman, and Mosaic.

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PC-17 PC TUTORIAL. An educational package that covers the basics of a 1st course in computer usage and the IBM PC OS.

PC-18 PC DOS HELP. An online HELP facility for DOS commands.

PC-19* PC-WRITE. Powerful, easy to use word processor. Program, docs, pr. drivers. 720K.

CURRENT NOTES MAGIC LIBRARY

These disks contain Mac programs in "Magic" format for use with the MAGIC SAC Macintosh emulator. Disks are $4.00 each. Order from CN Library, 122 N. Johnson Rd, Sterling, VA 22170. Add $1/6 disks for S&H.

M0: MAGIC SAC. Version 4.52, (or the most recent ver) of MAGIC program.

M2: TELECOM DISK No.1. BinHex 5.0, Free Term 1.8, FreeTerm.Doc, Kermit, PackIt III (V1.3), StuffIt 1.0, TermWorks 1.3.

M3: UTILITY DISK No.1. DES, Font Doubler, MacDump, Mini Finder, PackIt III (V1.3), Reverse Screen 1.0b1, RMover, Scan, Set File. SLICER. Version Reader 1.1, Write Stream.

M4: GAME DISK No.1. Backgammon, Bash Big Blue, Curves, MacLuff, MacYahtezee, Maze 3D, Meltdown, Missile Command, Munch, PepsiCas,Smile, Snow, Solitaire, Space Bubbles, Vax Runner II.

M5: DISK LIBRARIAN. Disk Librarian V1.82A. Disk Librarian Doc, Short Doc. Contains listing of CN MAGIC LIBRARY.

M6: GAME DISK No.20. Ashes, Black Box, Destroyer, HexPuzzle, Killer Kalah, MacPoly Demo, Office Attack, Point Symmetry Demo, Snake, Solitaire, Trophy List, Wall Game, Wheel.

M7: GAME DISK No.3. Ashes, Break the Bricks, Deep Ennui, Go, Mac Gunner, MacBugs, MacCommand, MacYahtzee, Wiz Fire 1.1

M8: DESK ACCESSORIES No.1. 3DTTT Game, Art Thief, Ascii, Bagels Game, Big Ben, Calculator, CopyFile, DA Tester 1.5, Delete File, Desk Acc. Tester, DeskZap 1.2, Eject&Reset, Extras, File Hacker DA, File Tools, Font Grapper+, Font Grapper3, Hex Calculator, HP 12c, MemScan, MemWindow, MerriMac BlackJack, miniWriter, MockTerminal, MockWrite, Moire, MW Count, Other 3.0, Puzzle, Reader, Rubik's Cube, Sampler, Scrapbook, Scientific Calculator, SetFile 3.3, SkipFinder, TheBox, Tiler 1.5, Trails, Transfer, TrapList, Utils, Word Count, Zoom Idle.

M9: UTILITY DISK No.2. Bind Icons, Change Appl. Font, Convert Desk Acc., Desk Accessory Mover, File Hacker, FontDoubler, Index, MakeScreen, MicroFinder, PurgeIcons, RamAStart 1.3, REdit, ResEd, SelectPaint, Show Version, User Interface Demo.

M10: GRAPHICS DISK No.1. Amy, Artisto, ball demo, Big Ben, Brooke, Bugs, Curves, Display Message, Dragon, Fighting 51, Fourth Dimension, GARF, HotSex!, Liar's Club, Living Art, Max Headroom, Moire 3.0, Nightmare, Optical Illusion, Paint Grabber, Painter's Helper #1, Pattern*, Pisces, Rotations, Saddle, The Fourth Docs, ViewPaint 1.5.

M11: PRINT UTILITIES. Coventry-12, Disk Labeler, Fast Eddie, Font Mover, Ink, MacWrite 4.5 to Text, miniWriter, MockWrite, Pica-10, ReadMacWrite, Walla Walla-9.

M12: MACBILLBOARD. Chipmunks, Donald & daisy, Goofy At Bat, Announcement, Babe Ruth, Carrotprint, Classic illusions, Escher, Escher Hands, MacBILLBOARD (MacPaint clone), Max, Mickey and Minney, mm, Quick Tour, T-Shirt.

M13: FONT DISK No.1. Akashi, AlgBlurb, Algebra, Athens, Boxie, Dover, Geneva, Hood River, ImageWriter, LED, London, Los Angeles, Luxor, Mars, Monaco, Park Ave, Pica, Ravenna, Rome, Runes, San Francisco, Seattle, Steel Brush, Ultra Bodoni.

M14: FONT DISK No.2. Bookman, Courier, Coventry, Dali, Genevaa, Hebrew, Manteco, Shadow Box, Sri Lanka, Times, Walla Walla, and font display 4.6 w/docs.

M15: GAME DISK No.4. Alice, Amps 3.0(B2), Bricks, Canfield 2.0,Iago, Lets Get Tanked!, MacHeads, Nim, Space Attack, Third Dimension.

M16: FONT DISK No.3. About Lachine, Alice, Avante Garde, Berkeley, Broadway, Camelot, Cartoon, Centura, Chancery, Eon, Exeter, Fallingwater, Fantaste Key, Fantaste!, Future, Ham, Helvitica, Hollywood, Lachine, Lineal, Madrid, Pittsubrg, San Quentin, Silicon Valley, Stencil, Unicol plus DAFont2.da and SysFonts.da.

M17: DUNGEONS OF DOOM 4.0. Graphic adventure game.

M18: DESK ACCESSORIES No.2. About Popup.txt, Alarm clock, Art Grapper+, Calculator+, Choose Scrapbook+, DA File, DA Tester 1.5, Disk Labeler, DiskInfo 1.45 + SICNs, Explorer, Gone Fishin', Hex Calc, Label Maker, MemWindow, MiniWRITER 1.34, Multi-Scrapbook, MW 4.5 Counter.DA, Popup 1.0, ProCount, ReadiPrinter, Ruler, SFstartup 1.0, Skipfinder 6.1, Sleep, Stars 1.6, Stars II, Sysfonts, TeaTime, Timer.

M19: PINBALL CONSTRUCTION SET GAMES. Pinball Construction Set Player plus 12 Games: Apple, Black Hole, Face, KalinBall, Madonna, Minute-Mag, Patchwork Mess, Phantom, Pure-Gemme, Samurai, The Royal Pain, Wizards Lair.

M20: GAME DISK No.5. Chase'Em, Crystal Raider, Daleks, Golf MacWay, Kill File, Kill, King, King.MacWrite, On-The-Contrary, StuntCopter1.2.

M21: GAME DISK No.6. Guess, Hacker's Contest, Hot Air Balloon, Match, Ramm1.0, Third Dimension, Trick-Track, Utaan Attack, Zero Gravity.

M22: GRAPHICS DISK No.2. BlowUp 3.0, BlowUp Notes, CalendarMaker 2.2.1, Dynamo, Graphic, MadMenus, Math21, Rays, Simutree, Spiro, Tree, Vanlandingham.

M23: VAMPIRE CASTLE. Graphic adventure game.

M24: DEEP ANGST. Graphic adventure game. 1 Mb ST only.

M25: GAME DISK No.7. Billiards, Cross Master Demo, Flash Cards, Hangman-9.0, MacLuff, Master Guess, Safari 1.0, Venn.

M26: GRAPHICS DISK No.3. 3D Sketch, AniRama, Bin/Graphics, Brownian Motion, Control, Fractal Contours, Fractals, Icon Collector, Julia, MakePaint, Melting Clock, Small View, ShapeArt, StarFlight, Window Demo.

M27: UTILITY DISK No.3. Browse/Shazam!, Clocks: analog & digital, Edit, FEdit 3.0, launch, lazymenu, Magic Beep 1.0, Menu Editor, microFinder, Quick Dir, Quick Print, RamStart2.0+, Road Atlas, ShrinkToFit, SicnEdit, SortMenu, SortMenu Code, SuperFinder4.0, TabsOut, Unpit, WayStation.

M28: RED RYDER 7.0. Red Ryder 7.0, Red's 7.0 Stuff, RR7.0 Macros, RR Docs.

M29: PCS PLAYER No.2. Pinball Construction Set Player plus Games: Circus Circus, D &D , Diadora, Max, Merlin, Modern Mistress, Queston, The Royal Pain, Twilight Zone, Whazit.

M30: GAME DISK No.8. Bowl-A-Rama, MacTrek 1.1, Mystery Box 1.0, Shots, Star Trek Trivia Quiz, Window Blaster 1.0.

M31: BLACK WIZARD. Graphic adventure game by Richard Loggins.

M32: FONT DISK No.4. Canberra, Chicago, Humanistic, Music, New Dali, Palencia Application, Palo Alto, Pioneer Shadow plus F/DA sorter and Font Tester.

M33: CLIP ART No.1. AirCraft, Business, Car Logos, Cars & Trucks, Clip Art Demo, Disney, Eyeballs, Flowers, Misc, Seasons,Trees1, Trees2, ViewPaint 1.5.

M34: GAME DISK No.9. 1000 Miles, Asteroids, Cairo ShootOut!, Donkey Doo, Duck Hunt, Pente 1.0.

M35: FONT DISK No.5. Beehive, Beverly Hills, Boise, Chicago, Courier, DeStijl, Ham, Happy Canyon, Helvitica, Mod. Chicago, Old English, Square Serrif, Sri Lanka, Worksheet.

M36: CASTLE OF ERT. Shareware graphic adventure game.

M37: MAC-A-MUG PRO DEMO. Version 1.0, Create your own mug shots by combining a variety of different facial features.

M38: VIDEO WORKS PLAYER #1. PD player for Video works animated screens. Includes 11 movies.

M39: DEMO DISK #2. Demos of Anatomiser (learn human anatomy), DeskPaint (desk acc MacPaint clone), and SuperPaint (graphic program with both MacPaint and MacDraw features).

M40: HACK, Version 1.03. Game is similar to Rogue, includes manual with full docs.

M41: RADICAL CASTLE. Graphic/text adventure game.

M42: FONT DISK No.6. 15 new fonts: Berlin, Boston II, Courier, Dorza, Highwood, MicroBoston, MiniBoston, New York, Palo Alto, Sparta, Stiletto, Symbol, Tatooine, Venice, Wartburg.

M43: UTILITIES No.4. DiskDup+, MacSnoop 1.03, RamDisk+ 1.4, ResTools 2.01, Oasis 2.01 (HFS), Font Librarian (HFS), Switch.

M44: FONT DISK No.7. 18 new fonts: 42nd Street, Aldous, Art Deco, Ascii, Blockbuster, Border, Clairvaux with docs, Coptic, Deep Box, Ivy League, Klingon, Las Vagas, Little Box, Madrid, Memphis, Minneapolis, Rivendell, Spokane.

M45: GAME DISK No.10. Blackjack 4.0, Gunshy 1.0, Humpback, New Social Climber, Panic, Puzzle 1.0, Star Trek Trivia Quiz, Video Poker.

M46: DA DISK No. 2. 35 DAs: 3D Tic-Tac-Toe, A-Bus ID Poker, Abacus, Calendar, CheapPaint, Collapse, ConCode, Crabs2, DAFile, DAFont, Disp.Msg, Double Apple, Executive Decision, FatMouse, FixPic2.0, Flow, Fun House, Func Keys, Font, Idle, KeyMouse, KnockOut, Multi-Scrap, MW to Text, New MiniDos, Orig Clock, PaintDA, Poker, ProCount, Ruler, Tiler1.5, Timelogger2.11, Utilities, Wrap, WXModem, Sample It.

M47: GRAPHICS No.4. Cursor Designer, Earthplot3.0, Graphics2.0, Mondrian1.0, MotionMaker2.0, Moving Finger, Wallpaper, Zoomation.

M48D: HYPERSTACKS No.1. Address, Databook, Fractal, Funy Day, Home Desk, HyperNews 1.2, HyperZoetropes, MacGallery, MacVermont #2, Notebook, Periodic Table, and ResEdit IPS. (Double-Sided)

M49D: HYPERSTAKCS No.2. Ear, Illusions, Passing Notes, Shipstack, Silly, and US States V2. (Double-Sided) **NOTE** M48 and M49 require HyperDA and some form of DA tester (Sample It! on M46 or DA Tester 1.5 on M8 or M18).

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NOVATARI
Northern VA Atari Users' Group

President	G.Weatherhead	703–938–4829
VP–ST	Ian Charters	703–845–7578
VP–8BIT	Alan Friedman	703–425–0575
Treasurer	Curt Sandler	703–734–9533
Secretary	Edmund Bedsworth.	
Membership	Earl Lilley	703–281–9017
Prg. Chr. XL/XE	Randy Ingalsbe	703–644–0159
	Nina Kraucunas	703–250–3572
Prg. Chr. ST	Jim Stevenson	
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Telecom SIG	Ed Seward	703–573–3044
MSDOS SIG	Mike Gibbons	703–440–0379
Sysop–Armudic	Ted Bell	703–455–5312
Sysop–WAACE	Ed Seward	703–573–3044
LIBRARY–8–BIT	Roy Brooks	703–750–0146
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LIBRARY–ST	Bob Bell	301–593–0889
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HOTLINE	Andrea Bonham	703–534–3503
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ARMUDIC	2400B	703–573–9219
BBS	2400B	703–573–9216
	300/1200B	703–573–9208
	300/1200B	703–573–9207

New Members: Dues are $20/year/family which includes a subscription to *CURRENT NOTES* and access to more activities. Join at the main meeting or at a chapter meeting or by sending $20, payable to NOVATARI, to Earl Lilley, 821 Ninovan Rd.SE, Vienna, VA 22180.

Novatari Main meeting meets the second Sunday of the month at the Washington Gas Light Building, 6801 Industrial RD, Springfield, VA. Take 495 to east on Braddock Rd. (620) to south on Backlick Rd.(617). Left on Industrial Rd. Washington GasLight is the second building on the right. 5:30 Telecom SIG; 6:15 announcements, open forum, door prizes; 6:45 VAST and 8BIT SIG meetings. **M.Vernon/Hybla Valley**, 1st Thursday, 7:30 Contact Ron Peters at 780–0963. **Sterling**, Sterling Library, 7:30–9:30, 1st Wed. Contact Milo Flagel at 471–5273.

BBS: Access to the BBS' requires a fee in addition to the dues. This fee is $5/year for NOVATARI members and $7.50 for members of other WAACE clubs, $10 for other nonWAACE users. BBS access fees are to be made payable to "NOVATARI" and sent to: Ed Seward, PO Box 541, Vienna, VA 22180.

VIENNA SIG. Vienna used to have a neighborhood group as well. Earl Lilley is willing to get it started again. Anyone interested call Earl 281–9017.

President's Report

ARMUDIC contest: What Does "ARMUDIC" mean? On regular 8x11 typing paper write the words for the acronym "ARMUDIC". Be sure to include your name. address, and phone number. Get your entry in to Georgia Weatherhead 3130 Cedar Grove, Fairfax,VA 22031 by May 15. The entries will be judged by the Novatari Board. Board members are not eligible. Winner will be announced at June meeting of Novatari. Winner does not have to be present to win. The Prize is a **2400 baud modem**.

DOOR PRIZE Contest. Write an original program to select winners of door prizes. Program must be entertaining with sound and graphics and, of course, contain an unpredictable random number generator. It may be written in any language and must be available for use in public domain libraries. Submit your entries on disk to the ST or 8–BIT librarians who will exchange your disk program for **any** disk in the Novatari pd library. By the end of the year, a grand prize will be awarded for the best program. The entries will be made available in the Novatari libraries for others.

17,000th WAACE User Wins. WAACE couldn't wait for the 20,000th user, because it was going out of business. Since WAACE is being formalized into an organization of Washington Area User Groups, the name WAACE for a BBS could be mistrued as belonging to the WAACE group. Therefore, the Novatari BBS will keep the ARMUDIC name and the WAACE BBS shall dissolve into the one electronic board. Note: Presidents of Atari UGs will still be allowed access to the executive washroom.

The ARMUDIC name was originally derived from the letters dialed to ring up the BBS. BUT DON'T DIAL THOSE LETTERS NOW! That is no longer the BBS number. See the Novatari heading for the new ARMUDIC phone numbers. The contest to select an acronym for the abbreviation, "ARMUDIC," is to give new meaning to the new life of our revered old BBS.

So the contest to celebrate the second birthday of the WAACE BBS and the 20,000th user had to be moved up to the 17,000th. The prize for the 17,000th user was the choice of three pieces of software, *MonitorMaster*, *Word Right*, or *GFA BASIC*. THE WINNER WAS---> Randall Buss of Herndon.

KID SIG. Ted Rabenko wishes to start a group of parents and children to enjoy the use of the 8–bit Ataris. His son is six, so he is interested in elementary aged children. Call 437–5221. Years ago Novatari had a KID SIG group going in the hallways of our meetings, but the kids grew up and are headed for college. The KID SIG could meet at the same time as the main meetings at WG&L, or in a home evenings, or in a computer friendly Fairfax Co. school. It only takes a couple of other parent/child members. Call Ted.

A.U.R.A.
Atari Users Regional Association

President	Steven Rudolph	301–464–0835
8–bit VP	Bob Langsdale	301–390–6554
16–bit VP	James Bonbright,Jr.	301–933–4891
Treasurer	Bob Brock	301–268–2554
Membership	Dave van Allen	301–593–4654
8–bit Libr.	Wayne Heiden	301–330–0130
16–bit Libr.	Herb Lane	202–332–3618
Equipment	Jesse Ayer	301–345–1592
Facilities	Richard Stoll	301–946–8435
Used Equip	Lincoln Hallen	301–460–5060

Meetings – Next meeting is May 19th in the Temple Isreal Social Hall (420 University Blvd. E., Silver Spring). Library sales begin at 7:00, the meeting begins at 7:30. May's theme is telecommunications with separate XL and ST demonstrations. There will be 8–bit and 16–bit door prizes.

Correspondence. All correspondence, including membership renewals, changes of address, etc. should be sent to: AURA, P. O. Box 7761, Silver Spring, MD 20910. AURA cannot guarantee *CURRENT NOTES* subscription fulfillment unless the member provides written confirmation of address changes, renewals, etc. to the address given above.

New Members. Dues are $20/year and include subscription to *CURRENT NOTES*. Send name, address, phone number, and check to above address.

N.C.A.U.G.
National Capital Atari Users' Group

President	Peter Kilcullen	202–296–5700
Vice President.	Mike Pollak	703–768–7669
Treasurer	Allen H. Lerman	301–460–0289
XL/XE Librarian.	Mike Pollak	703–768–7669
ST Librarian	Enrique Seale	202–295–0112

Meetings: 3rd Tuesday, 5:30 – 8:30 pm, room 543, National Science Foundation offices, 1800 G St., NW, Washington, DC. Closest subway stop is Farragut West on the Blue and Orange lines. Building is identified by sign for Madison National Bank on the corner. Front entrance is on west side of 18th between F and G.

New Members: Membership dues are $20 and include a subscription to CURRENT NOTES. Join at the meeting or send check, payable to NCAUG, to Allen Lerman, 14905 Waterway Dr, Rockville, MD 20853.

W.A.C.U.G.
Woodbridge Atari Computer Users' Group

President	Lou Praino	703–221–8193
First VP	Arnie Turk	703–670–2547
16Bit VP	Darrell Stiles	703–494–9819
8–Bit Board Rep	Stan Rupert	703–670–3338
ST VP	Bill Parker	703–680–3941
ST Board Rep	Bill Brooks	703–895–5404
Treasurer	Chris Moore	703–670–5143
Secretary	Frank Bassett	703–670–8780
Librarian	Mike Stringer	703–791–3331
Past President	Jack Holtzhauer	703–670–6475

Meetings: 7–10PM, Community Room, Potomac Branch, Prince William County Library, Opitz Blvd., Woodbridge, VA. Entering Woodbridge from either North or South on Route 1, proceed to the intersection of Route 1 and Opitz Blvd. (opposite Woodbridge Lincoln–Mercury). Turn West on Opitz and take first left turn into the library's parking lot. The Community Room is located to your left immediately upon entering the main building. Meeting Dates: Feb. 9, Mar. 8, Apr. 19, May 10, June 13.

New Members: Initial membership fee is $10/yr plus $1 monthly dues. Membership includes a subscription to *CURRENT NOTES*. Join at meeting or send check, payable to WACUG, to Frank W. Bassett, 15313 Blacksmith Terr, Woodbridge, VA 22191.

S.M.A.U.G.
So. Maryland Atari Users' Group

President	Terry Daniels	301–292–7594
Secretary	Fred Brown	301–645–4009
Treasurer	Samuel Schrinar	301–843–7916
Newsletter Ed	Leroy Olson	301–743–2200
Librarian	Sherwood Conner	301–292–5752

Meetings: 2nd Thursday, 7:30 pm, John Hanson Middle School in Waldorf, MD. Traveling thru Waldorf either east or west on Rt 5, exit on Vivian Adams located 200 ft west of Waldorf Carpets & Draperies and directly across from the Village Square sign.

New Members: Membership dues are $20 and include a subscription to *CURRENT NOTES*. Join at the meeting or send check, payable to SMAUG, to Sam Schrinar, 2032 Alehouse Court, Waldorf, MD 20601.

F.A.C.E.
Frederick Atari Comp Enthusiasts

President	Chris Rietman	301–663–0325
Vice President	Mike Kerwin	301–845–4477
Treasurer	Buddy Smallwood	717–485–4714
Librarian	Jason Harmon	301–663–1176
Secretary	Wilson Small	301–845–2370
Bulletin Board		301–865–5569

Meetings: 4th Tuesday, 7 – 9:30 pm, Walkersville High School, MD Route 194, one mile north of MD Route 26 (Liberty Road).

New Members: Dues are $25/year/family and include a subscription to *CURRENT NOTES*. Join at meeting or send check, payable to FACE, to Buddy Smallwood, PO Box 2026, Frederick, MD 21701.

CLASSIFIED ADS

Classified ads are free to subscribers of CURRENT NOTES ($0.10/word for others). Send your ad to CN CLASSIFIED, 122 N. Johnson Rd., Sterling, VA 22170.

ST SOFTWARE: Word Writer 2.0($23), Easy-Draw 2.3($28), Data Manager 1.1($21), Starglider($10), Leaderboard($9), Eight-Ball($6), Easy-Draw Personal Draw Art I($6). Kyle ALons, RR 1, Box 17, Boyden IA, 51234, (712) 725-2543. Wanted: used hard disk drive for Atari ST.

WANTED: An Atari 8-bit drive. Call Danny (301) 926-7081 evenings.

MONITORS: SC124 and SC1224. Also SF314 disk drive. Will consider combination of trade and cash. Want to get MagicSac+, WordPerfect, hard disk, database. Also have for sale or trade Word Writer, pc-ditto, DAC Accounting, Artic Fox, Sundog, Aliants, PD disks. Call David (202) 252-1766 10-4, M-F.

NOW AVAILABLE: "The Atari ST Book of Tips, Instructions, Secrets and Hints." 16 chaps, 160 pp, incl list of 30+ magazines (worldwide) w/ST coverage. $16.95 (includes N. American shipping.) Index Legalis, Box 1822-4, Fairfield, IA 52556.

FOR SALE: Atari 520ST, 1 meg, color & b/w monitors, single & double drives, magic sac+, and translator, printer, WordPerfect, more. $1,000 evenings. (703) 560-7042. Peter Skaer, 7759 Inversham Dr. #246. Falls Church, VA 22042.

FOR SALE: LDW Basic 2.0, $30, ST Pro Sprite Designer, $12. I will ship. Bob Reitz, 218 N. Fourth St., Sunbury, PA 17801. (717) 286-5901.

Atari 1040 ST/SC1224 color monitor, Atari XMM804 printer, Computeryes (color). Also software (Degas Elite, Aegis Animator, Printmaster Plus) and ST programming books. All in excellent condition-very limited use. $950. Call Frederick (301) 663-3398.

FOR SALE: OSS Basic XL w/docs, binder & toolkit disk, $20; OSS MAC/65 w/docs & toolkit, $25; PaperClip XE w/latest docs & SpellPak, $15; DeskCart(ST), $60; Avatex 1200hc modem, $75. All are in excellent condition. Call Peter (804) 271-0005.

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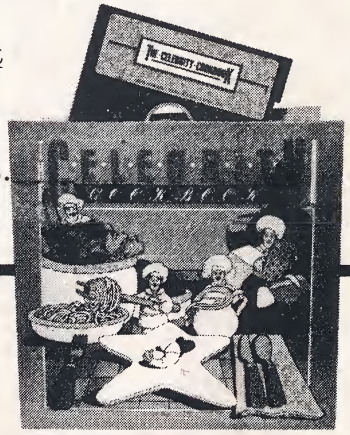

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